

JVC

SERVICE MANUAL

STEREO CASSETTE DECK

MODEL DD-VR9 A/B/C/E/J/U



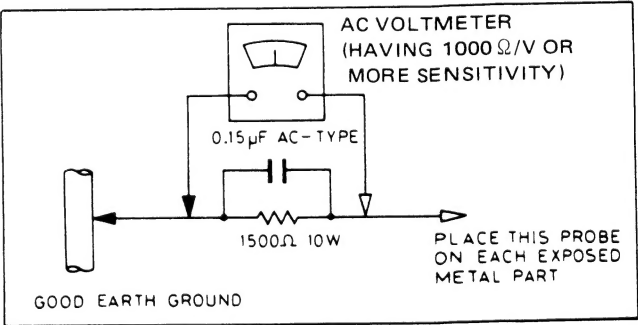
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Safety precautions

1. The design of this product contains special hardware. Many circuits and components specially for safety purposes.
For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. Electrical components having such features are identified by (Δ) on the schematics and parts list in Service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list in Service manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubing barriers and/or the like to be separated from live parts, high temperature part, moving parts and/or sharp edges for the prevention of electric shock and fire hazard.
When service is required, the original lead routing and dress should be observed, and they should be confirmed to be returned to normal, after re-assembling.

5. Leakage current check
(Safety for electrical shock hazard)
After re-assembling the product, always perform an isolation check on the exposed metal parts of the Products (antenna terminals, knobs, metal cabinet, screw heads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
Do not use a line isolation transformer during this check.
 - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5 mA AC (r.m.s.).
 - Alternate check method.
Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1500 Ω 10 W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.).
Measure the AC voltage across the resistor with the AC voltmeter.
Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.).
This corresponds to 0.5 mA AC (r.m.s.).



Features

1. Flip Reverse System

- Rotary head reverse system with 3-piece diecast head assembly that assures the head axis in the best position in the forward or reverse direction.
- Jewel lock mechanism enables superb quality of head for longer service life.
- Quick reverse mechanism using infrared sensor for a reverse time of 0.4 sec (during which sound is cut off).

2. Full logic mechanism with pulse-servo DD (Direct-Drive) motor

- 3-motor system: FG pulse-servo DD motor for the capstan and DC motors for the reels and mechanical drives.
- Silent mechanism.

3. Computer B.E.S.T. (Bias, Equalizer and Sensitivity of Tape) Tuning System

- Extracting the optimum tape performance, setting a flat response automatically.
- Automatic starting in timer recording.

4. Dolby[®] B-C NR System

- Dolby C NR for recording and playback.
- Provided with MPX filter key.

5. 3-head system which permits simultaneous monitoring with recording

- Ceramic-clad SA (Sen-Alloy) combination head

6. Dot-matrix 2-colour FL peak meter with digital peak indicator

- Peak hold mechanism.
- Wide range peak meter.

7. 4-way digital counter

- Tape remaining time is displayed during recording/playback in either direction.
- Music scan mechanism permits tunes to be skipped up to 20 selections.

*"Under license of Staar S.A., Brussels, Belgium"

- Can serve as a stopwatch, showing the elapsed time in recording and playback.
- Normally serves as a 4-digit tape counter with 2-point memory for block repeat.

8. Microcomputer-controlled mechanisms

- Auto record muting
- Index scan and blank search
- Mechanism mode indicators

9. Motor-driven sliding control panel

10. Time start mechanism (with safety lock)

11. Remote control jack provided

12. Auto tape select mechanism

13. Cassette holder with eject-up mechanism

* Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

* "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

Specifications

Type	: Stereo cassette deck
Track system	: 4-track, 2-channel
Tape speed	: 1-7/8 inch/sec (4.8 cm/sec)
Frequency response	
(-20 dB recording)	: Metal tape; 25-18,000 Hz (± 3 dB) 15-20,000 Hz Chrome tape; 25-18,000 Hz (± 3 dB) 15-20,000 Hz Normal tape; 25-17,000 Hz (± 3 dB) 15-19,000 Hz
(0 dB recording)	: Metal tape; 25-12,500 Hz (± 3 dB) Chrome tape; 25-8,000 Hz (± 3 dB) Normal tape; 25-8,000 Hz (± 3 dB)
Frequency response when using the computer B.E.S.T. tuning system: (-20 dB recording)	
	: Metal tape; 40-12,500 Hz (± 1 dB) Chrome tape; 40-12,500 Hz (± 1 dB) Normal tape; 40-12,500 Hz (± 1 dB)
	*The values are almost the same for all types of tapes when the computer B.E.S.T. tuning system is used.
S/N ratio	: 60 dB (S = 1 kHz, K3 = 3%, N = A-weighted, Metal tape) The S/N is improved by about 15 dB at 500 Hz, by max. about 20 dB at 1 kHz — 10 kHz and 4 dB MOL at 10 kHz with DOLBY C NR on and 10 dB at above 5 kHz with DOLBY B NR on.
Wow and flutter	
(Forward direction)	: 0.03% WRMS (DD-VR9A/E/C/J/U) 0.08% DIN 45500 (DD-VR9B/E)
Crosstalk	: 65 dB (1 kHz)

Harmonic distortion	: K3; 0.4%, THD; 1.0% (Metal tape, 1 kHz, 0 VU)
Channel separation	: 40 dB (1 kHz)
Heads	: Ferrite (playback) and Ceramic-clad SA (for record) combination head 2-gap ferrite head for erasing
Motors	: Pulse-servo DD motor (for Capstan) x 1 DC motor (for Reel) x 1 DC motor (for mechanical drive) x 1 DC motor (for sliding control pulse) x 1
Fast forward/ Rewind time	: Approx. 90 sec with C-60 cassette
Input terminals	
Input jack x 2	: Min. input level; 80 mV Input impedance; 80 k Ω
Output terminals	
Output jack x 2	: Output level; 0-500 mV Output impedance; 5 k Ω
Phones jack x 1	: Output level; 0-0.6 mW/8 Ω Matching impedance; 8 Ω - 1 k Ω
Other terminal	: Remote control x 1
Power requirement	: AC 240 V, 50 Hz (DD-VR9A) AC 120 V, 60 Hz (DD-VR9C/J) AC 240/220/120/100 V, 50/60 Hz (DD-VR9U)
Power consumption	: 33 W
Dimensions	: 17-1/8" (W) x 4-3/8" (H) x 10-7/8" (D) (435 x 110 x 277 mm) (with feet, buttons, switches)
Weight	: Approx. 15.7 lbs (7.1 kg)
Accessories	: Pin cords 2
Design and specifications are subject to change without notice.	

Name of Control and Their Function

TIMER switch

Set to REC or PLAY for timer recording or timer playback using an audio timer. In other cases, be sure to set to OFF. This unit is equipped with a safety lock mechanism to prevent accidental erasure of recorded tapes.

POWER switch

Peak level meter

When the MONITOR switch is set to SOURCE (■), this meter indicates the record input level and when set to TAPE (■), this meter indicates the recorded signal level on the tape. This meter holds the peak level about 2 seconds for easy level adjustment.

TAPE indicators

One of the indicators (NORM/CrO₂/METAL) lights by automatically detecting the type of tape used.

DIGITAL PEAK indicator

This is interlocked with the PEAK LEVEL meters and gives a direct digital readout of the peak recording input or playback level.

Cassette holder

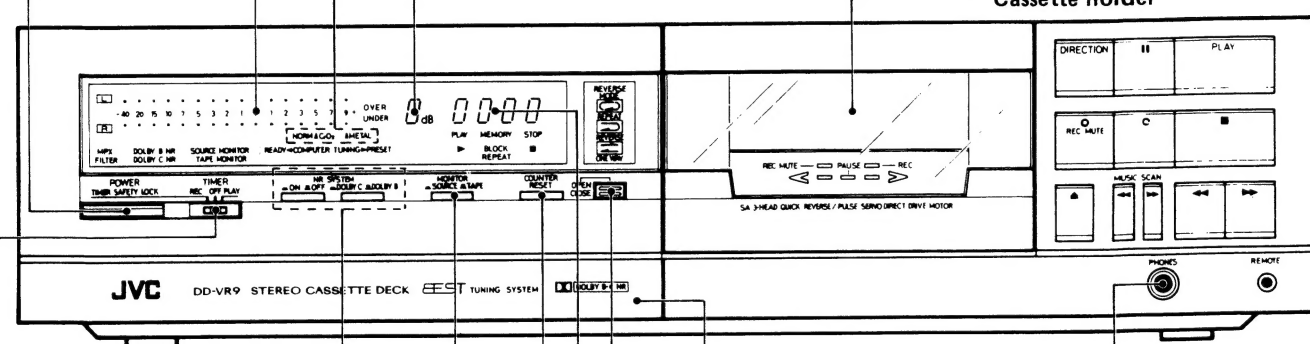


Fig. 1

Sliding control panel (See Fig. 2)

NR SYSTEM switches

The left button switches the NR SYSTEM ON or OFF. The right button switches to either the DOLBY B or C NR. When recording or playing back using an NR SYSTEM, press the left button to ON (■) first and set the right button to DOLBY B or C NR. When not using the NR SYSTEM, press the left button again to OFF (■).

Headphone jack (PHONES)

Connect headphones (with an impedance of 8 Ω — 1 kΩ).

MONITOR switch

Set to the SOURCE position (■) to monitor the source sound. Set to the TAPE position (■) to monitor the sound being recorded or to playback a tape.

OPEN/CLOSE button

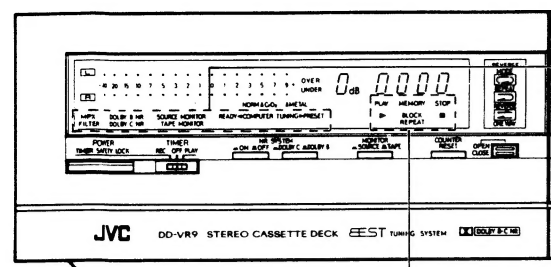
Press to open or close the sliding control panel. Press to open and press again to close the sliding control panel.

COUNTER RESET button

Press to reset the digital counter. However, the digital counter is not reset during the remaining time operation.

4-WAY DIGITAL COUNTER

Digitally shows the tape counter reading, tape remaining time and tape elapsed time according to the MODE key selection. When the SCAN SET key is pressed, the music scanning number is displayed prior to any other indication. When the music scan is completed, this counter automatically displays the previously set mode.



**MEMORY indicators (▶ PLAY MEMORY/
■ STOP MEMORY/BLOCK REPEAT)**

OUTPUT LEVEL control

Simultaneously adjusts the output levels of the unit and at the headphone jack. This control is not related to the peak meter. Tuning this control has no effect on the recording level.

COMPUTER TUNING operation keys

- **START key**
Press this to start the computer B.E.S.T. tuning system operation. This key should only be pressed when the deck is in the stop mode.
Note: For normal recording, do not press this key.
- **PRESET key**
Press this key for the unit to enter the preset mode while the READY ◀ indicator is lit. Press again to return to the stored ready mode.

Indicators (In the order from left to right)

- **MPX FILTER**
Lights when the MPX FILTER key is pressed to on. See item MPX FILTER Key.
- **DOLBY B NR/DOLBY C NR**
Lights to show that the corresponding NR circuit is operating. See item NR SYSTEM switches.
- **SOURCE MONITOR/TAPE MONITOR**
Lights to show that the corresponding monitor is operating. See item MONITOR switch.
- **COMPUTER B.E.S.T. TUNING**
 - **READY ▶ :**
When this indicator flashes, it shows that the computer B.E.S.T. tuning is operating. When the automatic settings are completed, this indicator lights.
 - **◀ PRESET:**
When this indicator lights it shows that the reference values of the type of tape used have been set. When this indicator flashes, it shows that the computer B.E.S.T. tuning is impossible and the characteristics of the tape being used are out of the range where automatic settings are possible. In addition, this indicator lights after flashing for 10 seconds.

BLANK SEARCH key

When the tape has been only partially recorded, press this key to search for and locate the beginning of the non-recorded remainder of the tape.

INDEX SCAN key

Press this key to locate the tune to be played back among a number of tunes on the tape.

4-WAY DIGITAL COUNTER operation keys

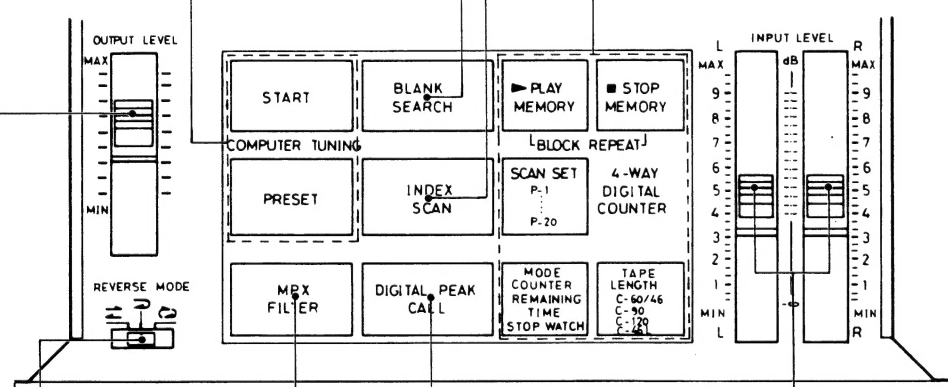


Fig. 2

REVERSE MODE switch

Select a single or full record/playback mode, or continuous play mode.

- ◀ : To play continuously sides A and B.
- ▶ : To fully play or record sides A and B.
- ↔ : For a single-side recording or playback.

MPX FILTER key

Normally set to OFF. However, when making a Dolbyized recording of an FM broadcast, set to ON to prevent misoperation of the Dolby NR circuit by eliminating the 19 kHz FM pilot signal. In addition, when this switch is set to ON, the indicator lights. Set to OFF when a tuner/receiver with an MPX FILTER is used. If the tuner/receiver does not have an MPX FILTER or if its filters are inadequate, the Dolby NR circuit may malfunction, the sound quality may deteriorate and beats may be heard, in this case, set the key ON. Press again to set to OFF.

When the TIMER switch is set to REC, the MPX FILTER is automatically turned on. Press again to set to OFF.

DIGITAL PEAK button

Press to call up the stored peak level. When this button is pressed again while the DIGITAL PEAK indicator is flickering, the new value is reset in the indicator and it is held in memory.

INPUT LEVEL control

This controls the right and left channel recording input levels simultaneously, dB indications are provided between 4 and 9 for approximate level compensation of the DIGITAL PEAK indicator.

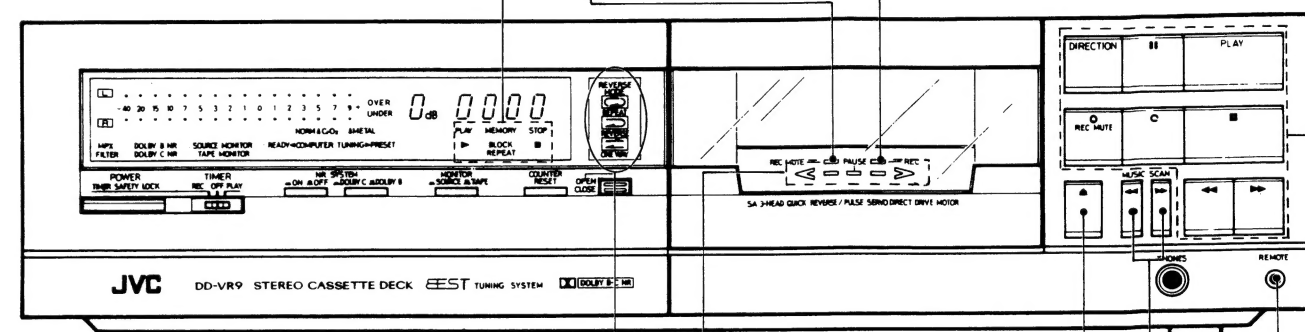
REC indicator

Lights during recording and record-pause.

REC MUTE indicator

Lights during record muting.

MEMORY indicators (▶ PLAY MEMORY/ ■ STOP MEMORY/ BLOCK REPEAT)



REVERSE MODE indicators (REPEAT/REVERSE/ONE WAY)

Mechanism mode indicators

When the tape starts running, the three LEDs between the direction indicators flash in sequence to show the direction of tape movement and the mode of operation as follows:

- **Recording/Playback**
LEDs flash in sequence at an interval of about 1 second in the direction of tape travel.
- **Fast Forward/Rewind**
LEDs flash rapidly in sequence in the direction of tape travel.
- **SCAN**
Each LED flashes twice in rapid sequence in the direction of tape travel.
- **PAUSE**
Only the center LED lights.

Cassette operation buttons

DIRECTION: Press to change the direction of tape. The direction is shown by the indicator (▶ or ◀).

II (pause . . . green): Press to stop the tape temporarily. Press the PLAY button to cancel the pause mode.

PLAY: Press to start recording/playback.

● (record mute . . . orange): Press to make about a 4–5 second, non-recorded section between tunes during recording.

○ (record . . . red): Press ○ and PLAY buttons simultaneously for recording. Press the ○ and II buttons simultaneously for record-standby.

■ (stop): Press to stop the tape.

◀◀ (rewind): Press to fast wind the tape from right to left.

▶▶ (fast forward): Press to fast wind the tape from left to right.

Fig. 3

▲ (eject) button

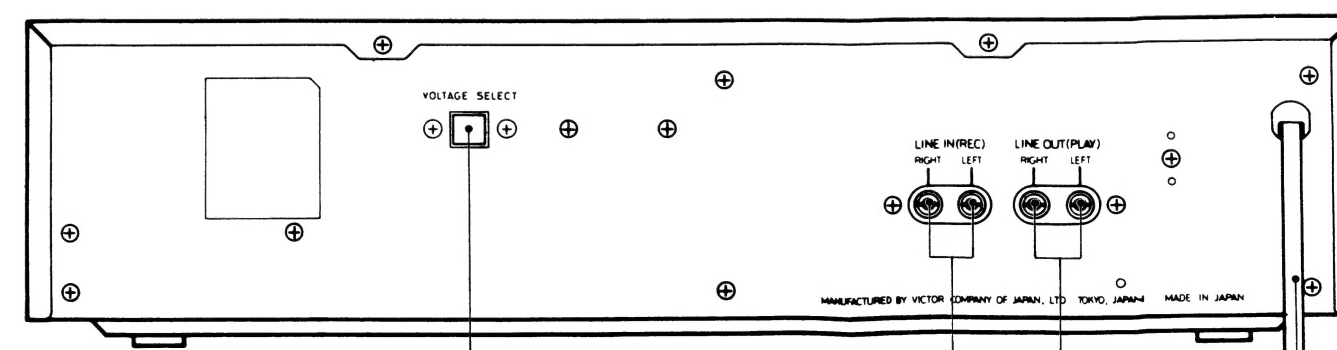
Press to open the cassette holder.

MUSIC SCAN buttons

Press to locate the beginning of the desired tune.

REMOTE control jack

Remote control of the DD-VR9 is possible with the optional remote control unit (JVC R-70E).



VOLTAGE SELECT switch (DD-VR9U only)

LINE IN (REC) jacks
LINE OUT (PLAY) jacks

Power cord

Fig. 4

Removal of the main parts

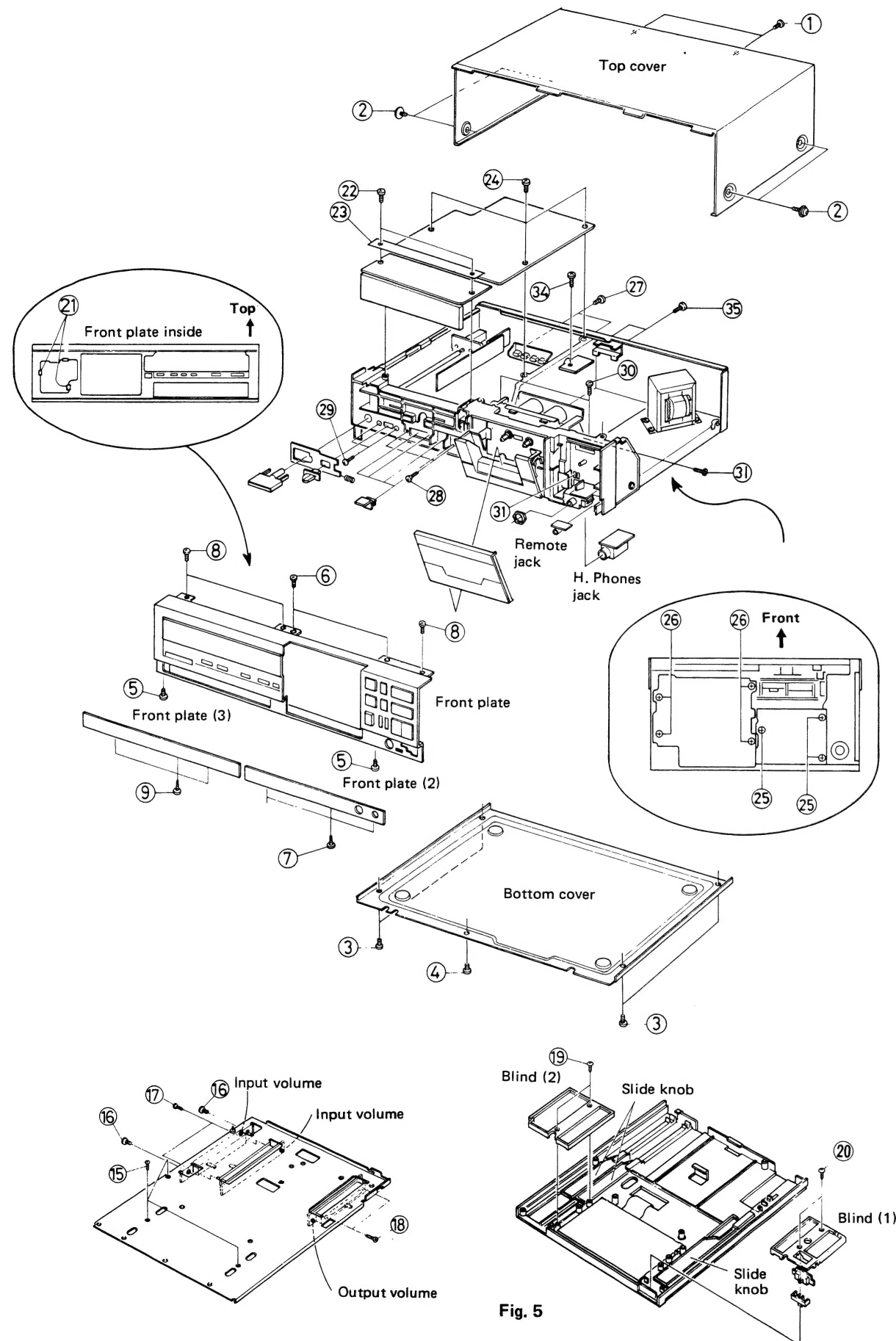


Fig. 5

Cassette decks are designed with emphasis on compact size; they use very small components which are installed with very short intervals. Be careful in handling them. Remove in numeric order.

• Removing external parts

• Top cover

Take out six screws (1) (2).

• Cassette lid

Open the cassette holder by pressing the eject button and pull the lid upwards to remove it.

• Bottom cover

Take out five screws (3) (4).

• Front plate assembly

1) Take out two screws (5) retaining the front plate from the bottom.

2) Take out three screws (7) retaining the front plate (2).

3) Slide out the drawer panel slightly and take out three screws (9) retaining the front plate (3).

4) Take out five screws (6) (8) retaining the front plate from the top.

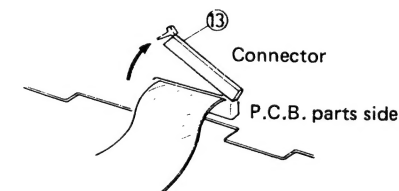
5) Remove the wire clamp and pull out the wire connector on the operation switch PCB.

6) Remove drawer switch SA.

• Drawer panel assembly

1) Remove the BES tuning PCB.

2) Remove the parallel wire from connector (13) on the amplifier PCB.



3) Remove the drawer cord. (When re-engaging it, refer to page 8.)

4) Take out two screws (10) retaining the bracket.

5) Pull out the drawer panel assembly.

6) Take out two screws (32) (33) retaining the drawer motor assembly.

• Removing components on the drawer panel assembly

1) Take out three screws (15) retaining the bottom cover.

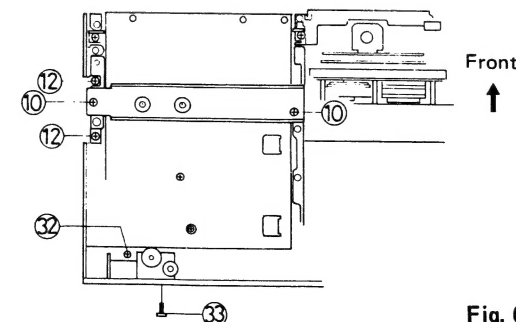


Fig. 6

2) Pull the bottom cover towards the front and remove it.

3) Take out four screws (16) (17) retaining the INPUT LEVEL VR.

(16 for L channel, 17 for R channel)

4) Take out two screws (18) retaining the OUTPUT LEVEL VR.

5) To remove the INPUT LEVEL slide control knobs, take out two screws (19) retaining the blind (2).

6) To remove the OUTPUT LEVEL slide control knob, take out two screws (20) retaining the blind (1).

• Removing electrical parts

• Operation switch PCB

From inside the front panel, disengage two claws (21) retaining the operation switch PCB.

• Display PCB

Take out two screws (22) and insulator (23).

• Computer board (BES tuning PCB)

Take out three screws (24) and two washers.

• Mechanism control PCB

1) Take out three screws (25).

2) Take out two screws (35) retaining the Power transistor assembly.

• Main amp PCB (This PCB cannot be removed without having removed the drawer panel assembly.)

1) Take out two slider retaining screws (12).

2) Take out four screws (26) retaining the PCB.

3) Take out two screws (27) retaining the pin jacks. (The drawer motor assembly is removed.)

• Switch PCB

1) Remove four button knobs (NR SYSTEM x 2, MONITOR and COUNTER RESET).

2) Take out two screws (27) retaining the switches.

• Timer switch PCB

1) Remove the POWER and TIMER switch knobs.

2) Remove the bracket and spring.

3) Take out two screws (29).

• Remote control jack

Pull it out towards the front.

• Headphones jack

Remove the nut.

• Drawer PCB

Remove screw (34).

• Removing the mechanical section

1. Take out two screws (30) from the chassis.

2. Take out screw (31) retaining the oil dumper holder on the right side of the mechanical section.

• Removing the mechanical parts

1. Left pinch roller (Fig. 7)

- 1) Take out adjust screw (4) VKS4513-001 retaining the pinch roller arm assembly.
- 2) Remove the left pinch roller together with the torsion spring.

2. Right pinch roller (Fig. 7)

- 1) Take out adjust screw (4) VKS4513-001 retaining the pinch roller arm assembly.
- 2) Remove the right pinch roller together with the torsion spring.

3. Head assembly replacement (Fig. 7)

- 1) Remove spring plate (1).
- 2) Remove spring plate (3).
- 3) Take out two screws (2) retaining the slide base.
- 4) Take out pinch roller adjust screws (4). (At re-assembly, the height of the pinch rollers should be fine adjusted.)

— To replace the head assembly without removing pinch rollers:

- 1) Perform steps 1) through 3) above. (Fig. 8)
- 2) Take out screw (5) retaining the guide lever and remove this from the pinch roller guide. (Fig. 8)

4. Reel disk assembly

- 1) Remove the reel stopper.
 - 2) Pull out the reel disk from the shaft.
- * Once the reel stopper is disassembled, it must be replaced with a new one.

5. DD motor (Fig. 9)

Take out four retaining screws (6).

6. Cam and reel motor (Figs. 10 and 11)

- 1) Take out seven screws (7)(8) retaining the reel base.
- 2) Take out four screws retaining the motors. (Remove also the belt of the reel motor.)

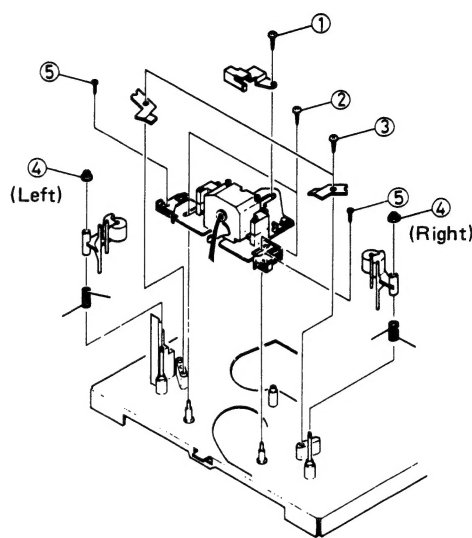


Fig. 7

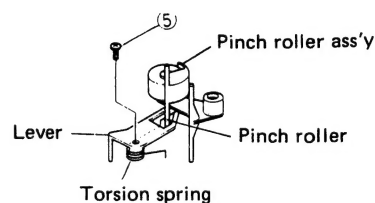


Fig. 8

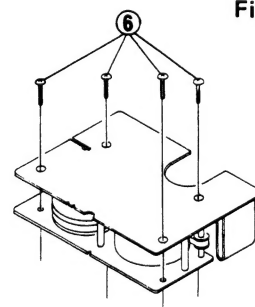


Fig. 9

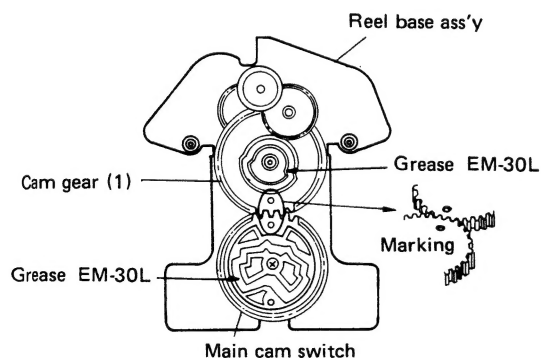


Fig. 11

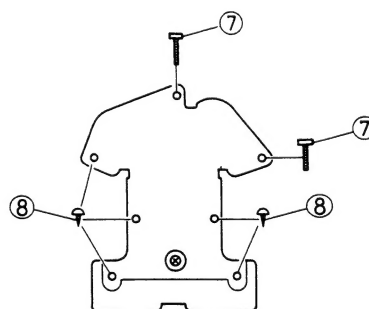


Fig. 10

Drawer Motor Drive Operation

Initial condition

1. ICA1 1/2 is set when the power is switched on.
(4 level: H)
2. ICA1 5 becomes H.

Operation condition

SW A1 ON

- (3) of ICA1 1/2 D flip-flop IC is activated by the H input.
 ((5) L → H) ICA2 1/4 and 2/4 are maintained at H or L.
 ((3) H → L, (6) L → H)
 (7) or (8) of ICA3 turns H to activate the drawer motor.
 ((7) L → H)

Stop condition: This refers to the operation for stopping the drawer motor when the drawer is completely out or when it is completely in.

When the drawer control stops, the motor is overloaded and the current at ICA3 (6) increases.

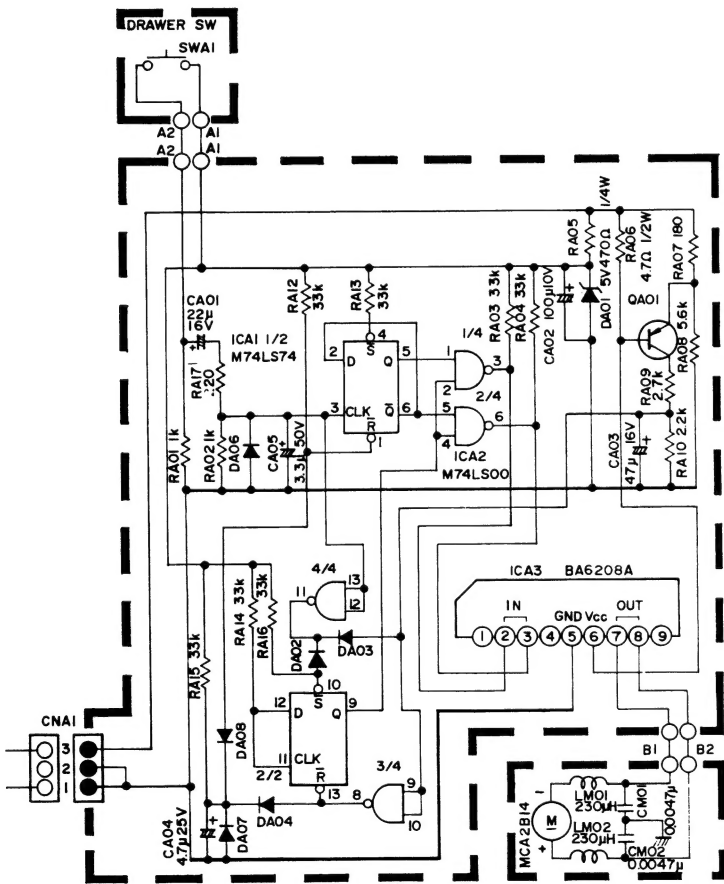
Transistor QA01 detects the current increase and operates.
(Collector L \rightarrow H)

ICA1 2/2 is activated (reset) via the NAND circuit of ICA2 3/4, and the level of (9) becomes L.

The inputs to the NAND circuits 1/4 and 2/4 in ICA2 become L and the H outputs stop the operation of motor drive ICA3 (stopping the motor).

Other

ICA2 4/4 is provided to set ICA1 2/2 when SWA1 is pressed while QA01 is ON (during drawer operation). (It is the circuit that drives the motor.)



How to Engage Drawer Cord

1. Use Kevlar cord (680 mm long and 0.5 mm diameter).
2. Install the string in the sequence of the numbers.

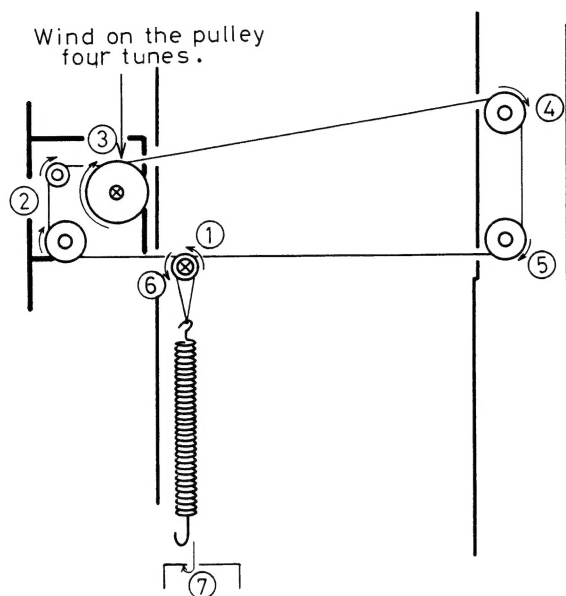
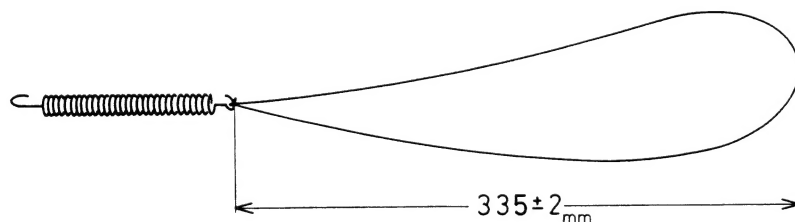


Fig. 12



Main Adjustments

[I] Equipment and Measuring Instruments used for Adjustment

1. Electrical adjustment

- 1) Electronic voltmeter
- 2) Audio frequency oscillator (range: 50–20 kHz and output 0 dB with impedance 600 Ω)
- 3) Attenuator
- 4) Standard tapes for REC/PB
 - Maxell UD — Normal tape (TS-5)
 - TDK SA — Chrome tape (TS-6) or equivalent
 - JVC ME — Metal tape (TS-7)

- 5) Reference tapes for playback (JVC Test Tape)
 - TMT702 (for head azimuth adj.)
 - VTT712 (for motor speed, wow flutter adj.)
 - VTT664 (for reference level 1 kHz) or VTT724
 - TTT739 (for playback frequency response)
 - TMT6447 (for music scanning)
 - TMT6448 (for music scanning)
- 6) Resistors : 600 Ω (for attenuator matching)

2. Mechanical adjustment

- 1) Torque testing cassette gauge (CTG-N)

[II] Mechanical Part of Adjustment and Replacement

Tape run adjustment

1. Put the mechanism into the PAUSE mode, then adjust the height of right and left tape guides (B) and (D) to that of the REC/PB head tape guide with adjustment screws (C) and (E).

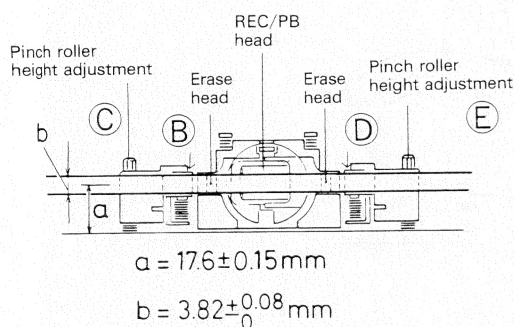


Fig. 13

REC/PB head azimuth adjustment

1. Connect an electronic voltmeter to LINE OUT and a low frequency oscillator and an attenuator to LINE IN.
2. Forward play back TMT702 with side A towards you, then adjust screw (F) so that the output is maximized.
3. Forward record 12.5 kHz input of -20 dB on TS-5 with side A towards you, rewind it and check the output level.
4. Set side B of TS-5 towards you, reverse play back the section recorded in 3. above, and adjust screw (G) so that the output is maximized.
5. After adjustment, protect screws (F) and (G) against loosening by painting screw locking compound.

— When replacing the head —

In the rotary head section for auto reverse, its tilt, azimuth, height, etc. are adjusted precisely. Therefore, when the REC/PB head alone has been replaced, they must be readjusted. In this place, replace the head block.

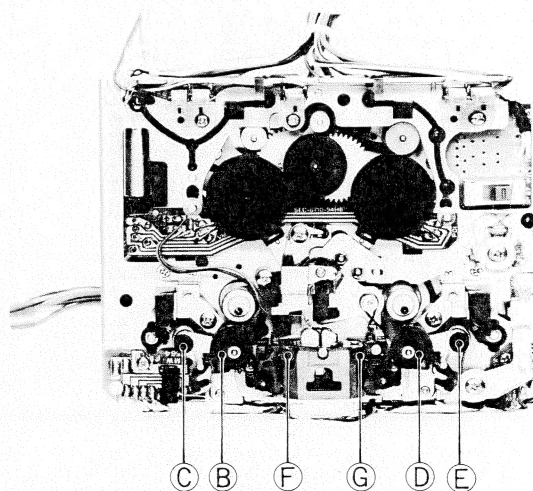


Fig. 14

2. Check the erasing coefficient of TS-7 (metal tape) by listening in the forward and reverse modes.

— Checking method —

Erase the tape on which a 400 Hz or 1 kHz input of 0 VU +20 dB is recorded, then check so that sound is heard.

3. After adjustment, protect screws (C) and (E) against loosening by painting screw locking compound.

Item	Adjustment	Adjusting point	Standard value	Remarks
Adjusting motor speed	Connect a speed meter (an electronic counter) to the LINE OUT terminals. Play back the VTT712 test tape. Adjust the semi-fixed resistor in the motor until the reading of the speedometer is 3000 Hz.	Semi-fixed resistor in the motor	3000 Hz	If the speedometer functions as a wow and flutter meter, also, connect the deck to the INPUT terminals of the meter.
Checking wow and flutter	Connect a wow and flutter meter to LINE OUT terminals. Play back the VTT712 test tape. Check to see if the reading of the meter is within 0.052% (WRMS).		0.052% (WRMS) (DIN 45500)	If the reading becomes moving value even if conforming to the standard, a reclaim may be raised. Repairs are necessary.
Checking playback torque	Employ a torque testing cassette tape (CTG-N) for the checking, or remove the cassette cover and use a torque gauge.		40-70 gr-cm	If the standard torque is not obtained, replace the take-up disc assembly.
Checking fast forward torque	Measure the torque in the fast forward mode in the same manner as in the above.		More than 80 gr-cm	
Checking rewind torque	Measure the torque in the rewind mode in the same manner as in the above.		More than 80 gr-cm	
Multi-music scan check	1. Using a TMT6447 with the counter display switch set to MMS. Push the FF SCAN or REW SCAN button to check scanning. 2. Using the TMT6448, the music scan mechanism does not function.			
Adjusting auto reverse	Adjust VR01 so that the voltage at TR-P1 or CP04 (capacitor) negative side is 0.23 V for the transparent section of TS-5 leader tape in the stop mode.			

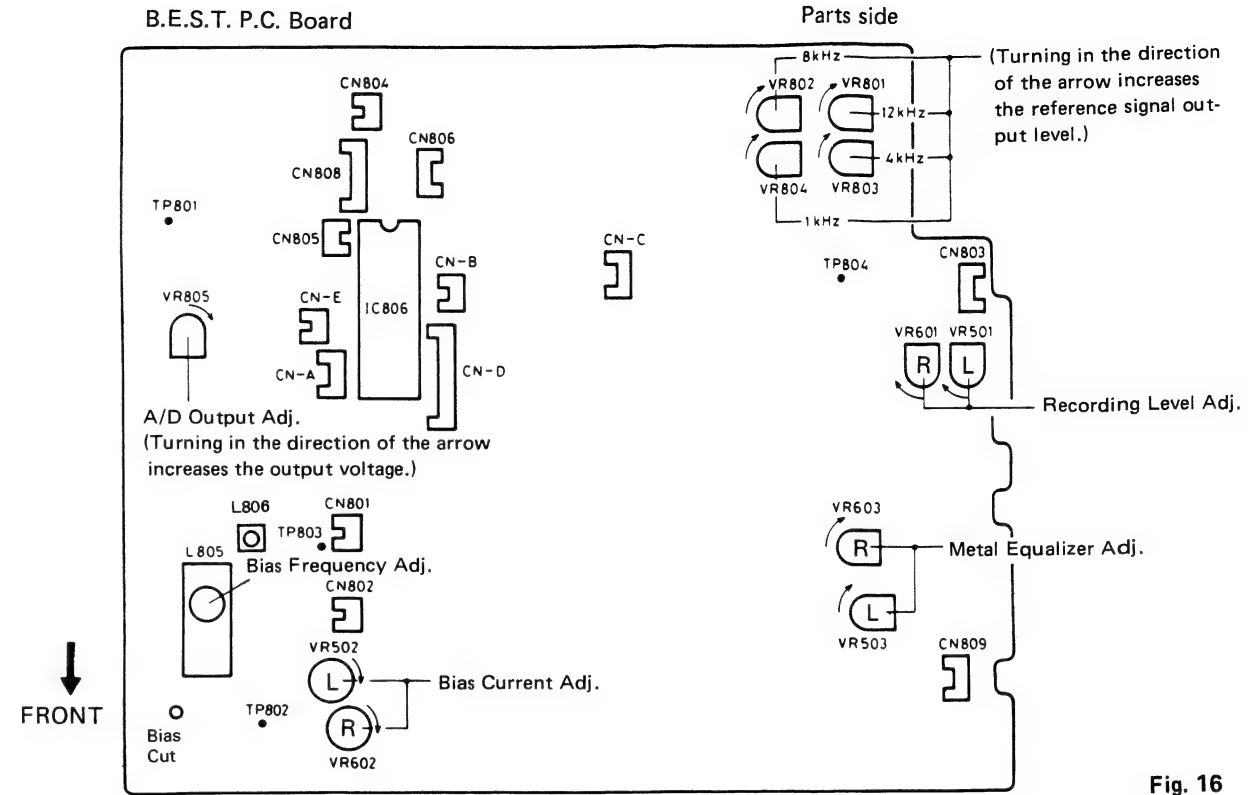


Fig. 16

[III]

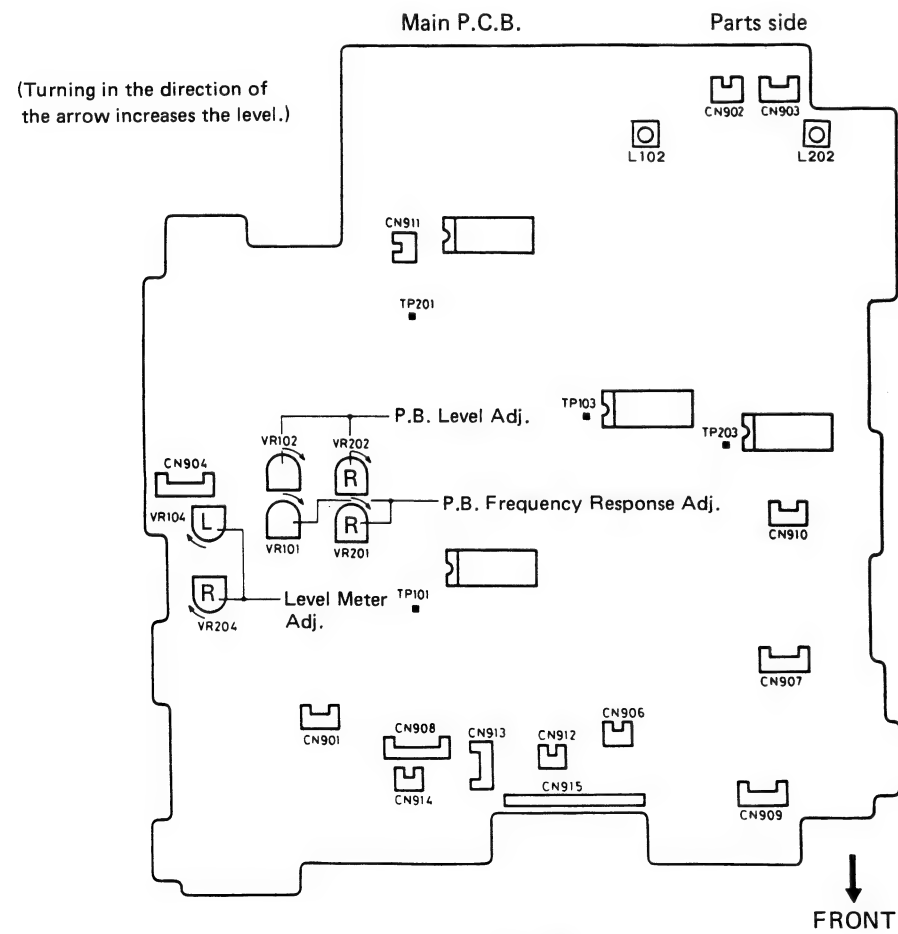
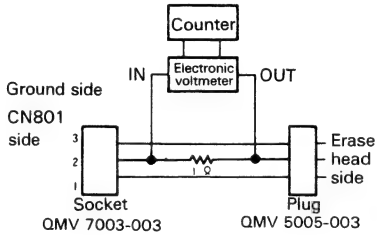
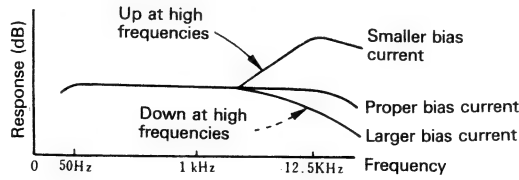


Fig. 15

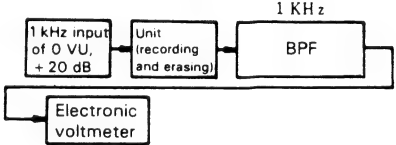
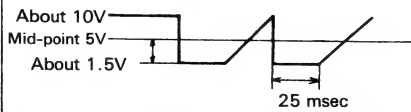
[IV] Electric Circuit Adjustment Procedure






Implement this procedure after adjusting tape travel and azimuth. Adjustment should be performed in numerical order Measurement should be performed with MPX FILTER key OFF and output level control at MAX.

[illegible]

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
4	FL (fluorescent) level indicator sensitivity	<ol style="list-style-type: none"> 1. Set MONITOR SW to SOURCE. 2. Apply 1 kHz input of about -20 dBs from LINE IN. 3. Adjust input level controls so that LINE OUT level becomes -4 dBs. 4. Adjust VR104 and VR204 so that "0 dB" points in the FL level indicator light. At this time, when input ATT is turned down by 0.5 dB, both "0 dB" points for R-ch and L-ch should go out. 5. Turn down input ATT by 20 dB. 6. Adjust VR351 and VR451 so that "-20 dB" points in the FL level indicator light. At this time, when input ATT turned down by 2 dB, they should both go out. 7. Check 4 above. 	VR103, 203 (Input level controls) VR104, 204 (Amp. P.C. Board) VR351, 451 (FL P.C. Board)		
5	Bias OSC. frequency	<ol style="list-style-type: none"> 1. Connect erase current measuring instruments to CN801 erase head wire as follows: 2. Connect an electronic voltmeter across 1-ohm resistor and the output of the voltmeter to the counter. 3. Use a metal tape and put the unit in REC pause mode. 4. Adjust OSC block L805 so that bias OSC frequency becomes 81 kHz \pm 1 kHz. 5. Adjust L806 so that erase current is maximized. 6. Switch the tape direction and adjust L806 so that bias OSC frequency difference between forward and reverse tape directions is minimized. 	(Computer P.C. Board) L805 L806 L806		
6	REC/PB frequency response	<ol style="list-style-type: none"> 1. Set MONITOR SW to SOURCE. 2. Apply 1 kHz input of about -20 dBs from LINE IN. 3. Adjust input level controls so that LINE OUT level becomes -4 dBs. 4. Turn down input ATT by 20 dB. 5. Use a normal tape and put the unit in REC mode. 6. Set MONITOR SW to TAPE. 7. Record 1 kHz and moreover 50 Hz and 12.5 Hz. Play back this recording. Then, adjust VR502 and VR602 so that the deviations in output level of 50 Hz and 12.5 kHz from 1 kHz reference meet the standard values. (Basically, adjust so that the response at 1 kHz and 12.5 kHz is flat.) 8. Use a normal tape, record 1 kHz and 12.5 kHz on it and play back this recording. Then, adjust VR503 and VR603 so that the response at 1 kHz and 12.5 kHz is flat. 9. Use a chrome tape, record 50 Hz, 1 kHz and 12.5 kHz on it and play back this recording. Then, confirm that the response meets the standard value. 	(Computer P.C. Board) VR502, 602 VR503, 603	With 1 kHz reference, 0 ± 3 dB at 50 Hz and 0 ± 3 dB at 12.5 kHz	Incorrect adjustment of bias current gives the recording characteristics shown on the left. 

(No.4235) 12

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
7	REC level	<ol style="list-style-type: none"> 1. Apply 1 kHz input of about -10 dB from LINE IN and adjust the input level controls so that LINE OUT level becomes -4 dBs. 2. At this time, after confirming that "0 dB" points in FL level indicator light, record on a normal tape at 0 dB for R-ch and L-ch. 3. To obtain 0 dB level playing back this recording, adjust REC signal current. 	VR501, 601 (Computer P.C. Board)	0 dB	For both normal and chrome tapes, the level difference between R-ch and L-ch should be less than 1 dB (1 VU). Use a normal tape for adjustment and confirm that adjustment level difference is less than 1.5 dB and level difference between R-ch and L-ch is less than 1.0 dB for chrome and metal tapes.
8	Checking REC distortion rate	<ol style="list-style-type: none"> 1. Record 1 kHz signal on which LINE OUT level is -4 dBs and FL level indicator indicates "0 dB". 2. Check this PB output with a distortion meter and confirm that the distortion rate meets the standard value. 		Normal tape: less than 2.0% Chrome tape: less than 3% Metal tape: less than 2%	This check should be performed after adjusting bias current and REC level.
9	Checking REC S/N	<ol style="list-style-type: none"> 1. First record 1 kHz input at FL level indicator "0 dB", then cut off the input partway and perform no-signal recording. 2. Play back this recording and measure the ratio of 0 dB REC output and no-signal REC output with an electronic voltmeter. This ratio should meet the standard value. 		Normal tape: more than 42 dB Chrome tape: more than 42 dB	With input level controls set to MAX, apply an input (-21 dBs) with which FL level indicator indicates "0 dB".
10	Checking erasing coefficient	<ol style="list-style-type: none"> 1. Apply 1 kHz input from LINE IN and adjust input level controls so that FL level indicator indicates "0 dB". 2. Turn up the REC level by 20 dB and record 1 kHz input. 3. Rewind the tape and erase a part of the recording. 4. Measure the output ratio of erased and non-erased parts with an electronic voltmeter. 		More than 65 dB	Connect a BPF between the unit and electronic voltmeter for measurement. Check it with a metal tape. 
11	Adjusting B.E.S.T. A/D	<ol style="list-style-type: none"> 1. Switch the power OFF and connect a computer checker. Use DD-9 computer checker No. 4. <ul style="list-style-type: none"> • Connect TESTH wire to pin TESTH of the adapter. • NONH wire is not needed. • Connect ground wire to the chassis of the unit. 2. Set the MONITOR and TEST SWs of the checker to ON. (Set the other SWs to OFF.) 3. Switch the power of the unit ON. 4. After confirming that the SENS bits change between logic 0 and 1, press the PRESET key on SENS 8 to fix the SENS bits. (Pressing the PRESET key again causes the SENS bits to start to change.) 5. Record 1 kHz input of -20 VU on UD tape. 6. Check the output waveform at AD TP801. 7. Adjust VR805 so that A/D value is 128. 			When REC/PB is performed at a preset value (SENS 8), the LINE OUT level becomes about 24 dB. 

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
12	Adjusting B.E.S.T. OSC.	<ol style="list-style-type: none"> 1. Use a UD tape and put the input in pause mode. 2. Measure TP804 with an electronic voltmeter. 3. Confirm that oscillation occurs at 1 kHz. Adjust VR804 so that the output is peak at -31 dBs. 4. Press the START key and confirm that oscillation occurs at 4 kHz. Adjust VR803 so that the output is peak at -32 dBs. 5. Press the START key and confirm that oscillation occurs at 8 kHz. Adjust VR802 so that the output is peak at -32 dBs. 6. Press the START key and confirm that oscillation occurs at 12.5 kHz. Adjust VR801 so that the output is peak at -32 dBs. <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> <p>VR802</p> <p>8 kHz</p>  <p>1 kHz</p>  <p>VR804</p> </div> <div style="text-align: center;"> <p>VR801</p> <p>12.5 kHz</p>  <p>4 kHz</p>  <p>VR803</p> </div> </div> <p>For test program:</p> <ol style="list-style-type: none"> 1) The B.E.S.T. tuning mode is selected from the four modes (SENS, MEQ, BIAS, HEQ) by pressing the START key. POWER ON SENS - MEQ - BIAS - HEQ ↑ 2) Each of these modes stops stepped change of the value by pressing the PRESET button. (Pressing the PRESET button again causes it to change.) 	VR804 VR803 VR802 VR801		 <p>Read the peak value as the pointer swings.</p>
13	Checking B.E.S.T. tuning operation	<ol style="list-style-type: none"> 1. Set the TEST SW of the checker to OFF to turn the power ON. Check the checker bits. BIAS SENS MEQ HEQ (L/R) 7 8 3 8 2. Load a UD tape and press the START key, then confirm that the unit enters READY mode. Record 1 kHz, 4 kHz and 12.5 kHz at -20 VU, rewind the recording and play it back. Then, confirm that the deviations in output level of 4 kHz and 12.5 kHz from 1 kHz are within ± 1 dB. 3. Also check 2 above with SA or metal tape. 			

Step	Item			Frequency and input level	Output raise value, deviation value
14	Checking DOLBY circuit (Rec mode)	Signal input: LINE IN Cal. level: 400 Hz -6 dBs Output terminal: No. 1, No. 3 of CN910	DOLBY B (Rec)	1 kHz, Cal -40 dB	+5.7 dB \pm 1 dB
				5 kHz, Cal -20 dB	+3.5 dB \pm 1.5 dB
			DOLBY C (Rec)	1 kHz, Cal	0 dB \pm 1 dB
				1 kHz, Cal -40 dB	+17 dB \pm 1.5 dB
				5 kHz, Cal -20 dB	+3.5 dB \pm 1.5 dB
				1 kHz, Cal	0 dB \pm 1 dB

Connections

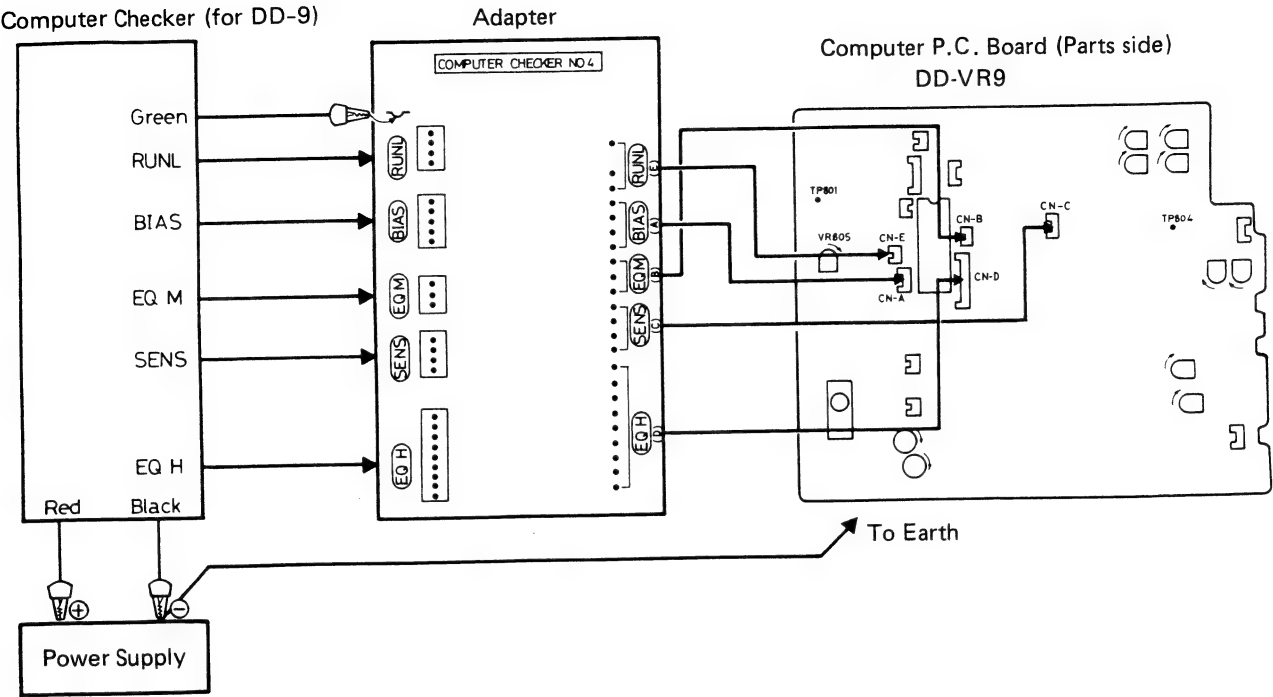


Fig. 17

Standard Schematic Diagram of DD-VR9(Amplifier Circuit)

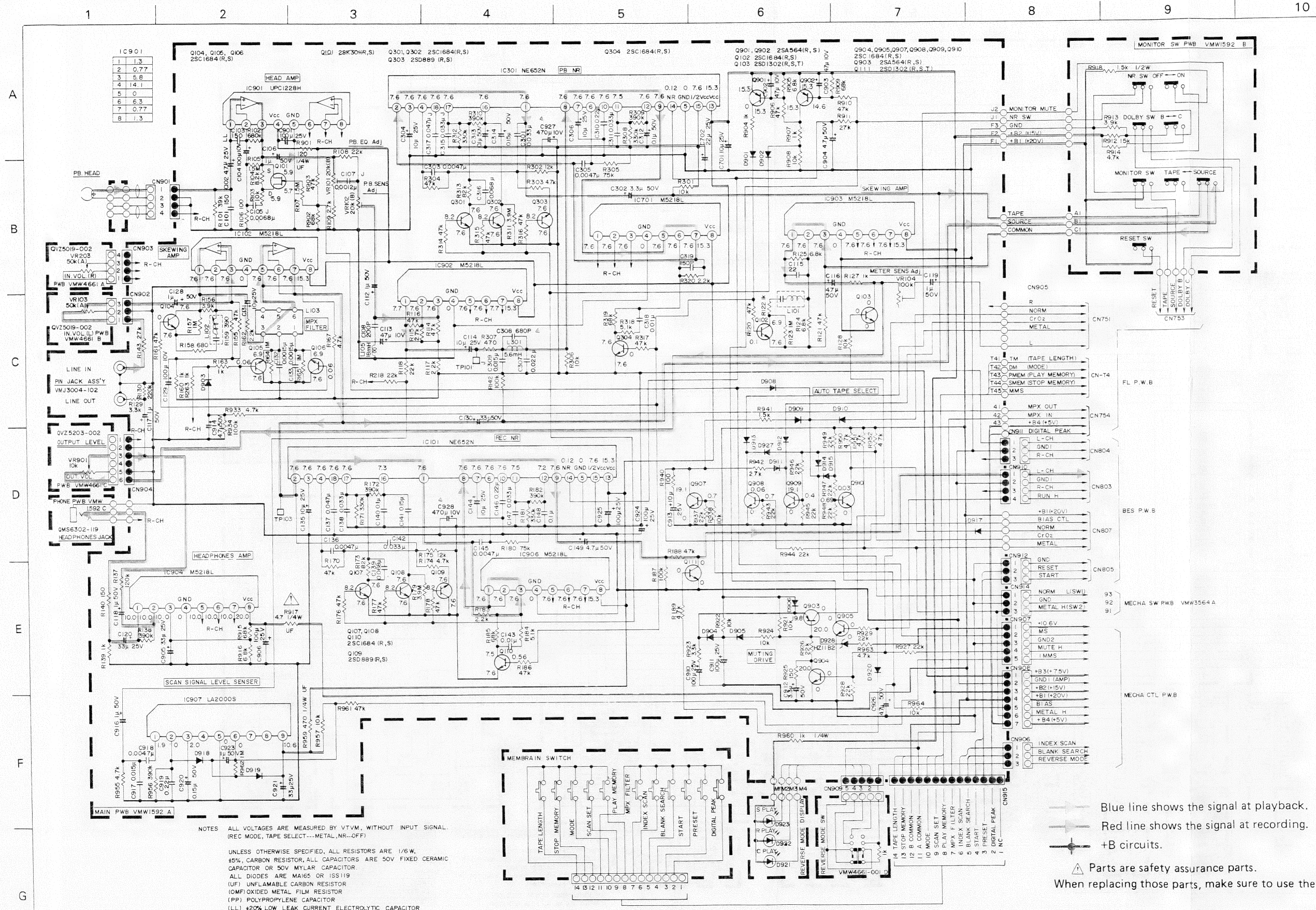


Fig. 18

Standard Schematic Diagram of DD-VR9(Mechanism Circuit)

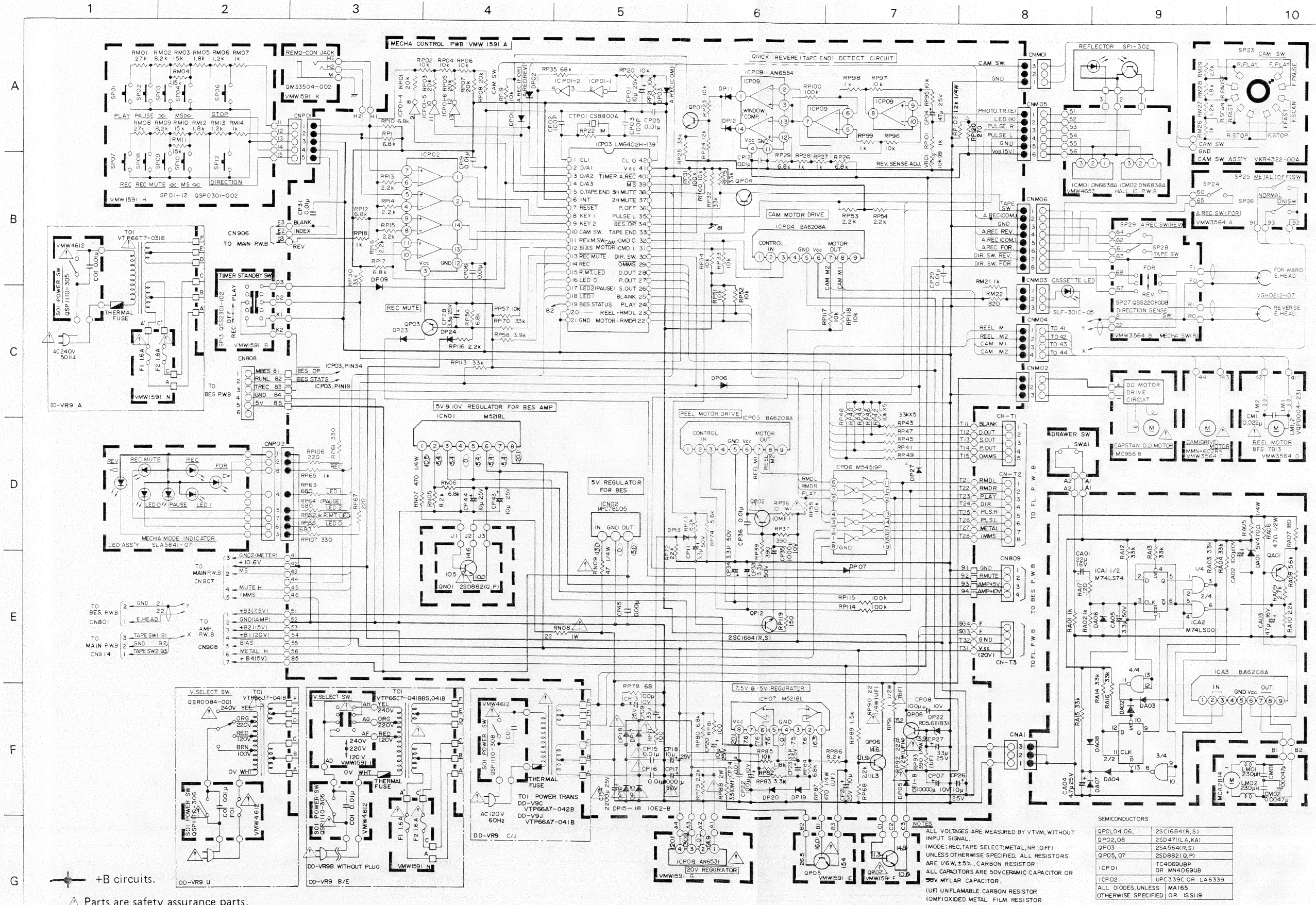


Fig. 19

Standard Schematic Diagram of DD-VR9(BEST Tuning Circuit)

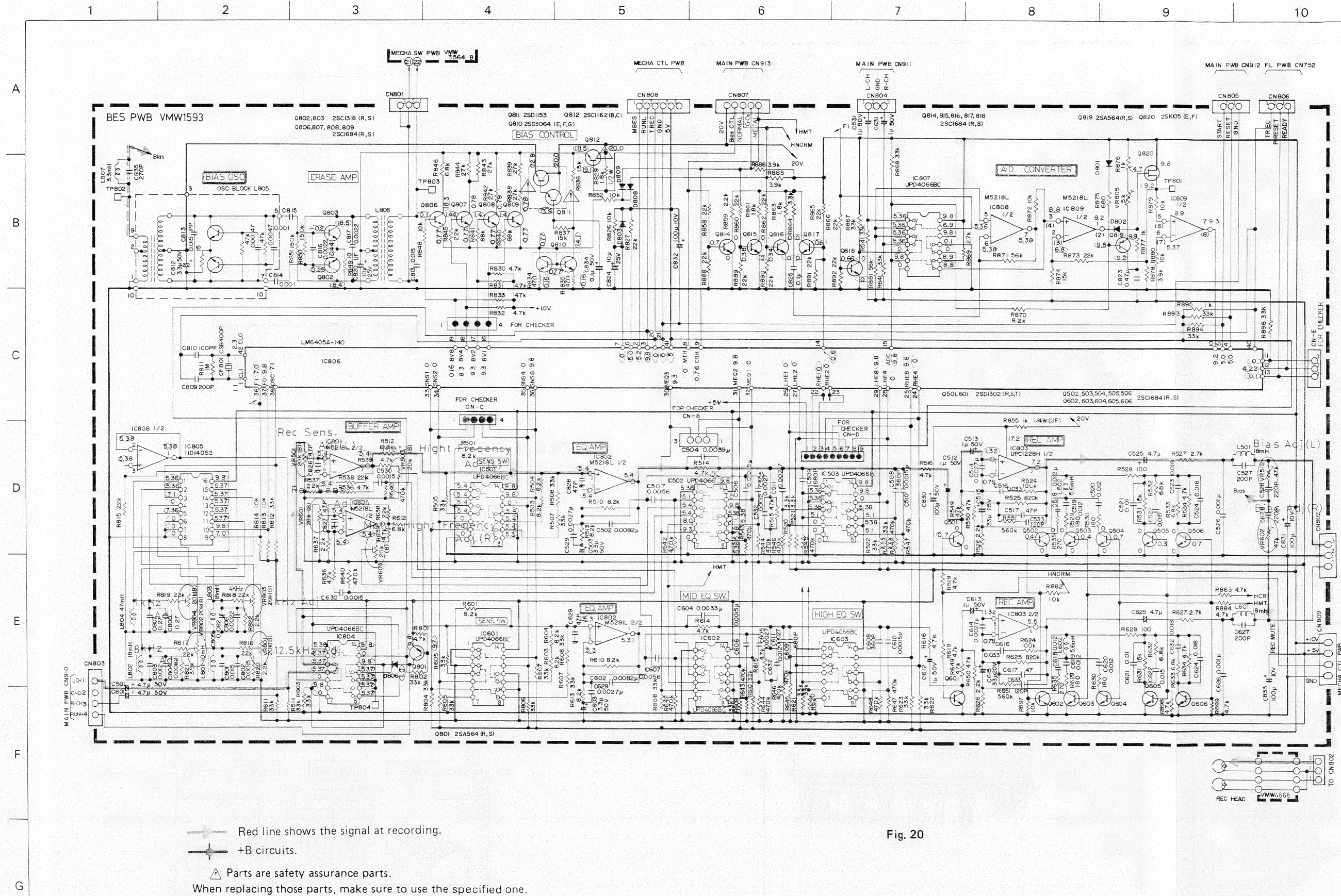


Fig. 20

Standard Schematic Diagram of DD-VR9(Diaplay Circwit)

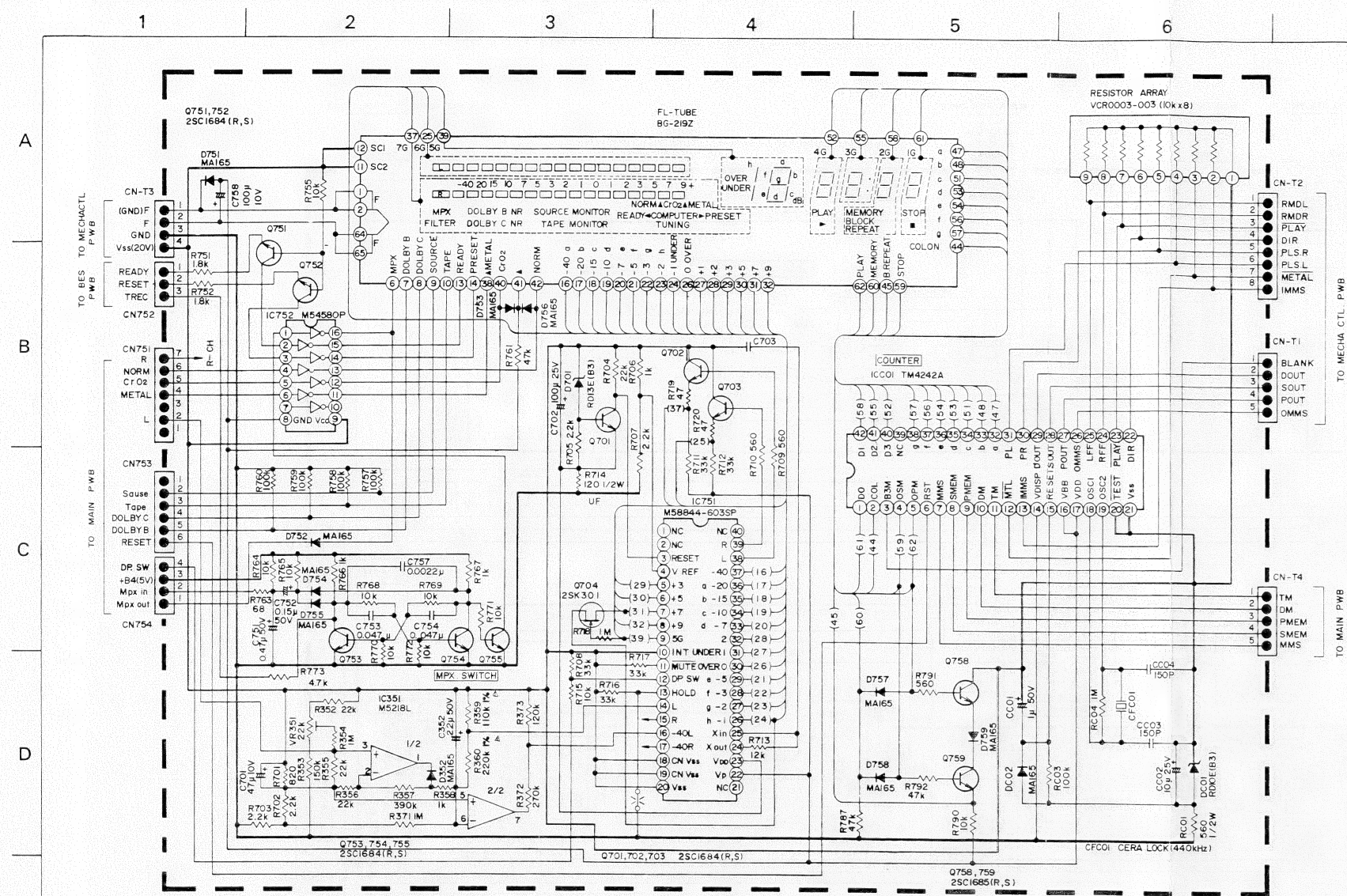
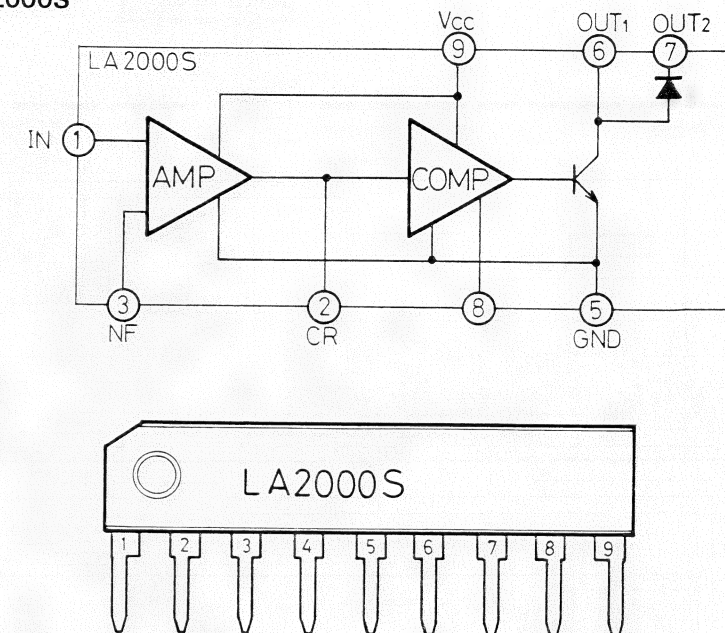


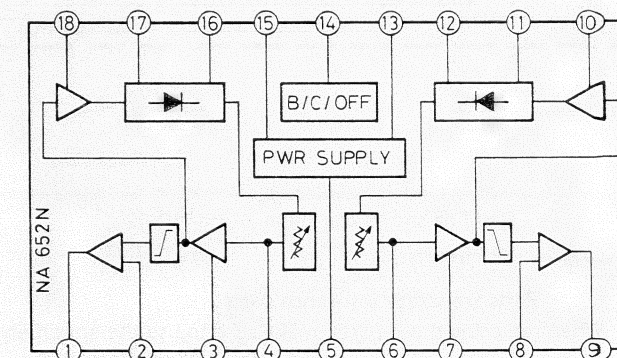
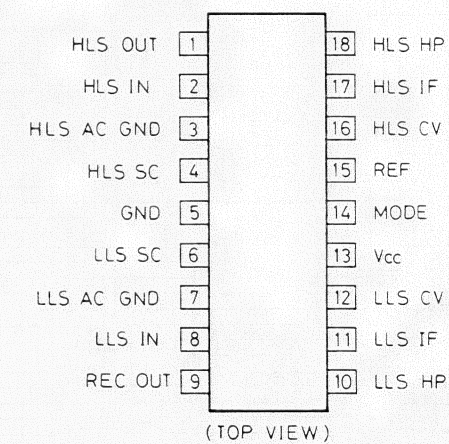
Fig. 21

- +B circuits.

LA2000S



NE652N



Block Diagram of DD-VR9

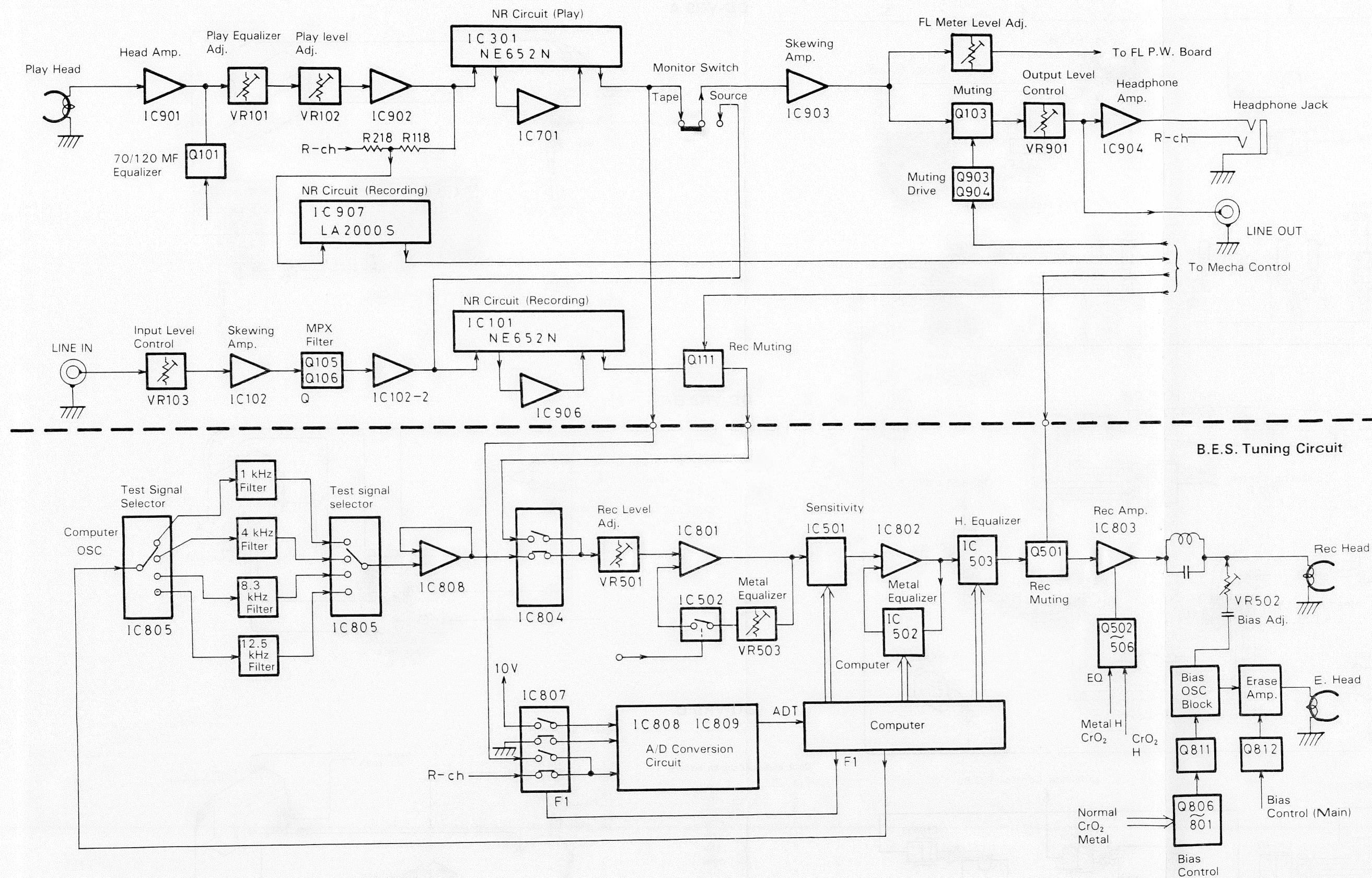


Fig. 22

Wiring Connections (1) (Mechanism)

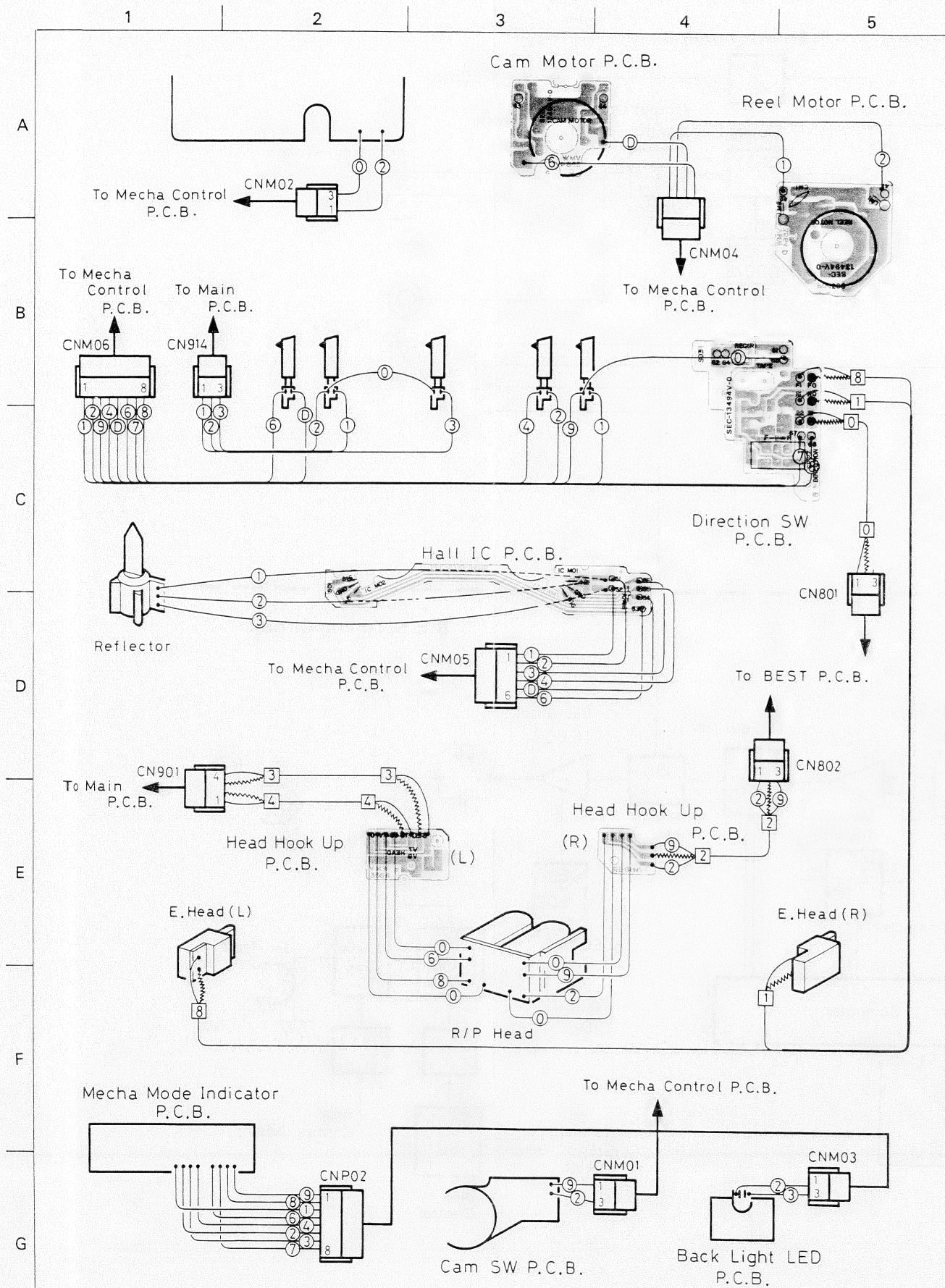
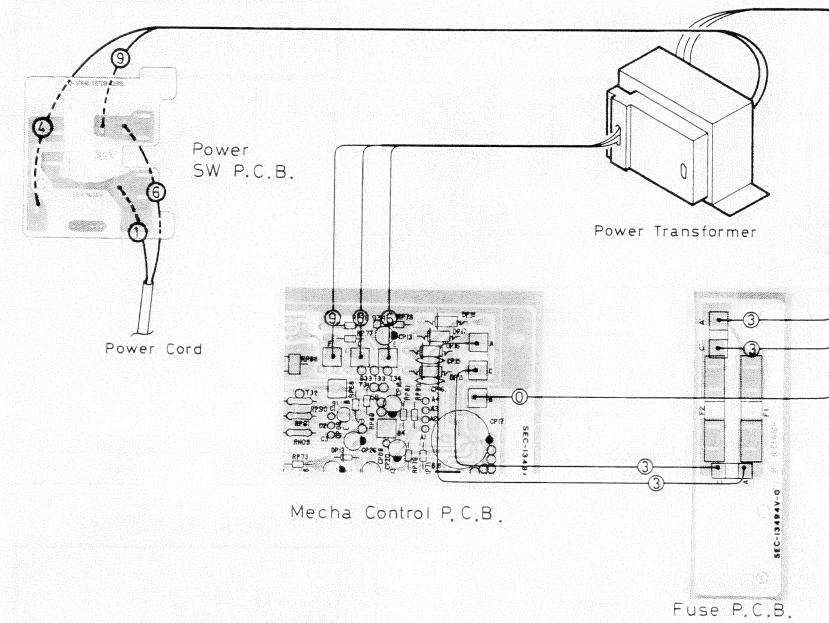
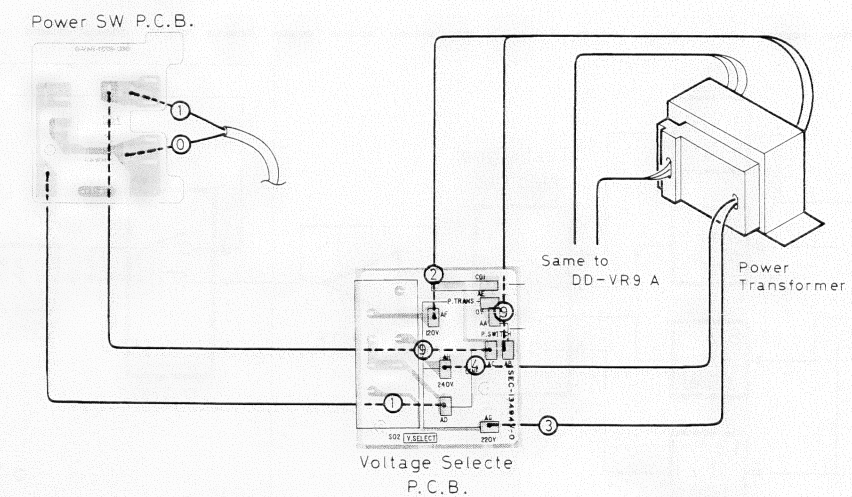


Fig. 23

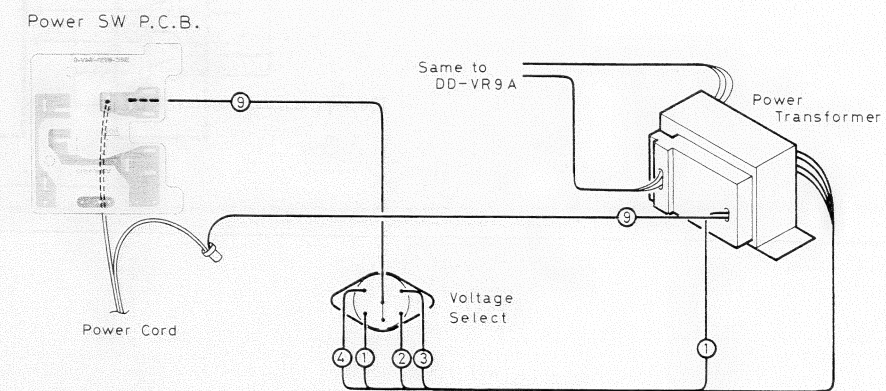
DD-VR9 A



DD-VR9 B/E



DD-VR9 U



Color code are shown below

- | | | |
|---|-------|------------|
| 1 | ..... | Brown |
| 2 | ..... | Red |
| 3 | ..... | Orange |
| 4 | ..... | Yellow |
| 5 | ..... | Green |
| 6 | ..... | Blue |
| 7 | ..... | Violet |
| 8 | ..... | Grey |
| 9 | ..... | White |
| 0 | ..... | Black |
| D | ..... | Pink |
| C | ..... | Light Blue |

Wiring Connections (2) (BEST Tuning)

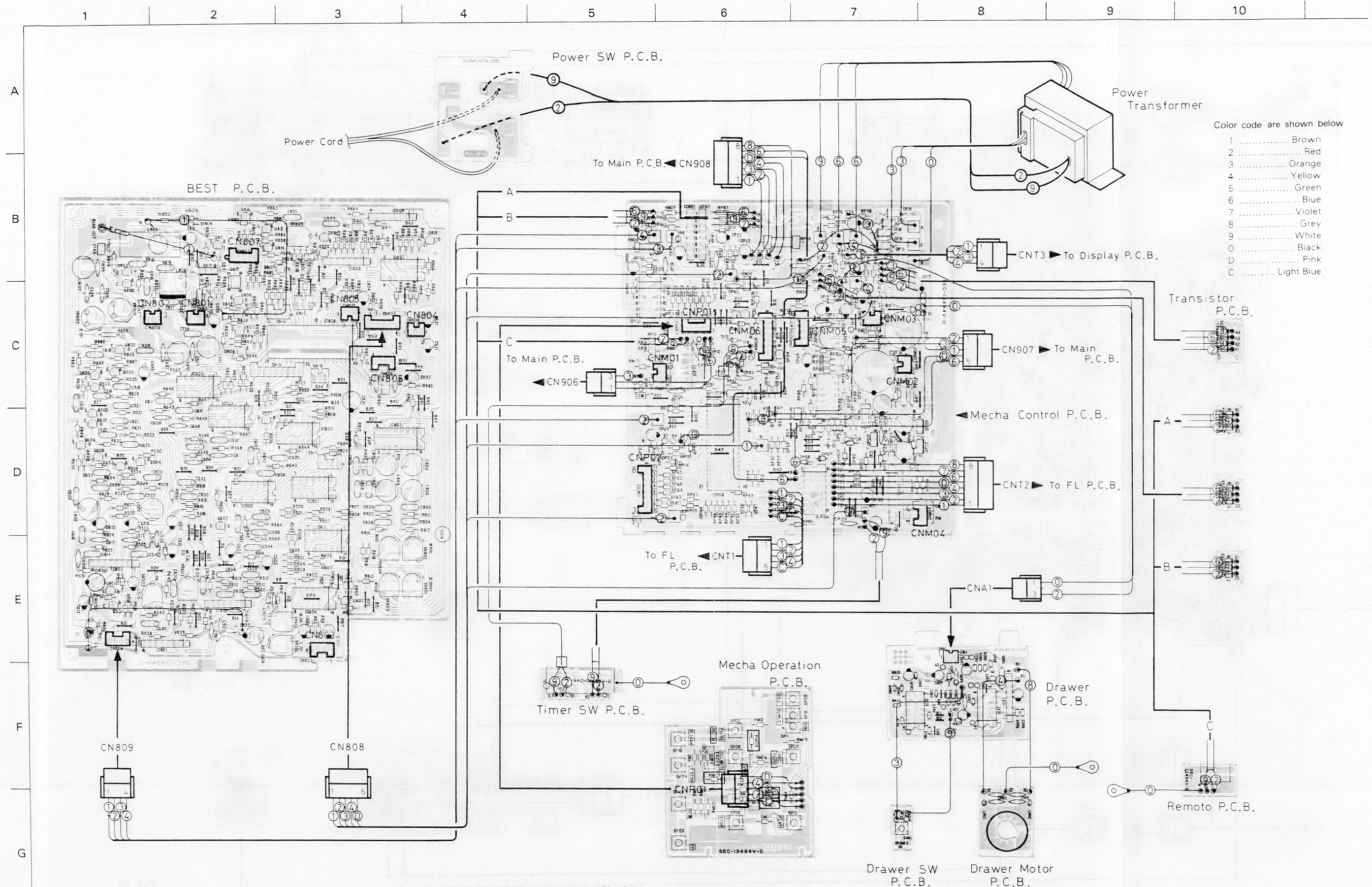


Fig. 24

Wiring Connections (3) (Main Amp)

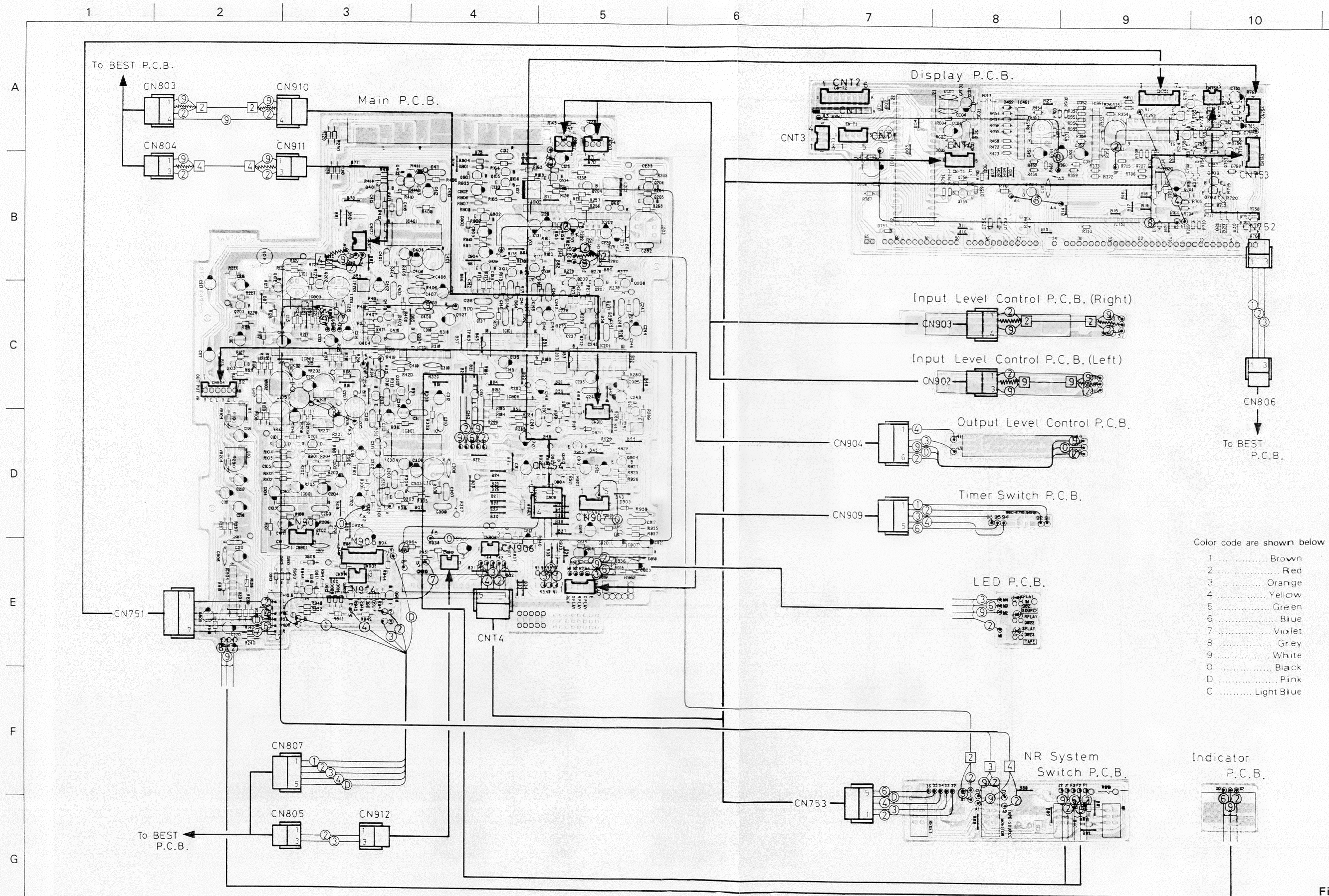
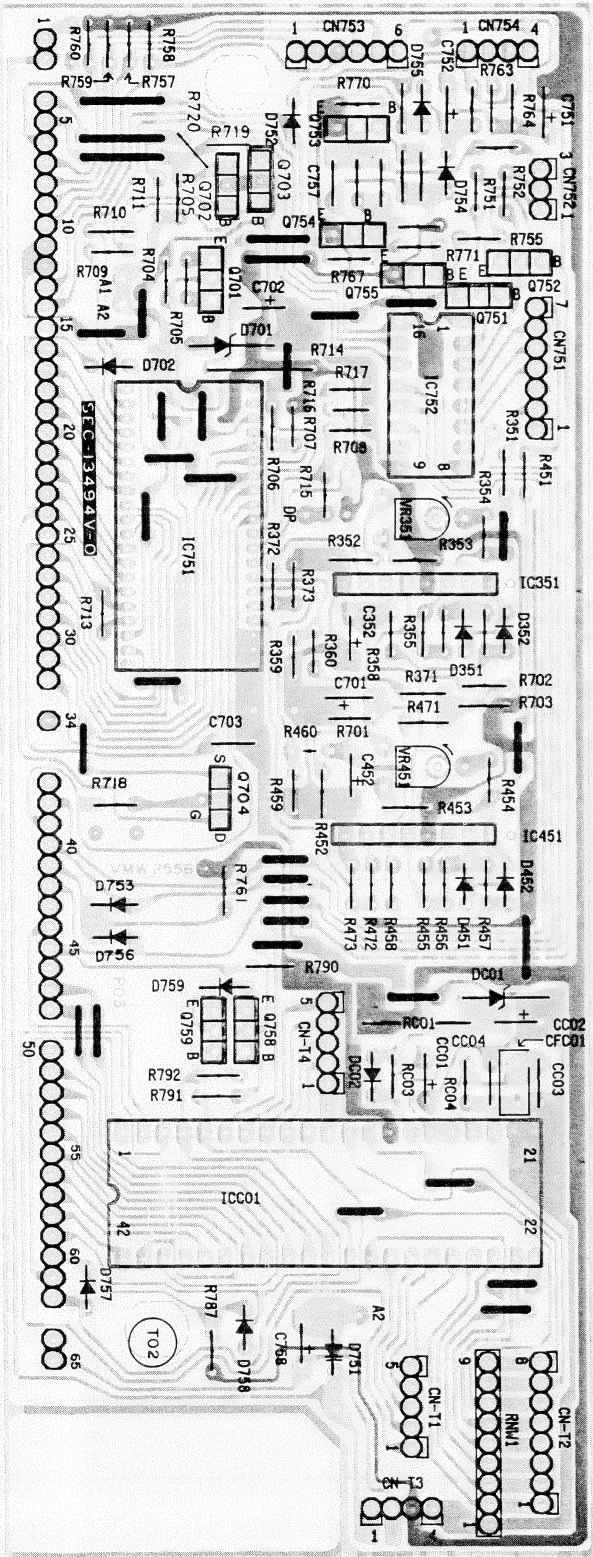


Fig. 25

P.C. Board Parts and Parts List

(Display P.C. Board)

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.



Front

Fig. 26

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	IC351, 451	M5218L	I.C.		2
	IC752	M54580P	"		1
	IC751	M58844-604SP	"		1
	ICC01	TM4242A	"		1
	Q701-703,	2SC1684(R,S)	Transistor		10
	751-755, 758, 759	MA165	Si. Diode		12
	DC02, D352, D452, 751,				
	752-759				
	DC01	RD10E(B3)	Ze. Diode		1
	D701	RD13E(B3)	Diode		1
	VR351, 451	QVP8A0B-024	V. Resistor		2
	CN752	QMV5005-003	Plug		1
	CN-T3, CN754	QMV5005-004	Connector		2
	CN-T1, -T4, CN753	QMV5005-005	Plug		3
	CN751	QMV5005-007	Connector		1
	CN-T2	QMV5005-008	"		1
	RC01	QRD121J-	C. Resistor		1
	R714	QRD129J-121	"		1
	R374, 474,	QRD141J-	"		2
	RC03, 04, 352-358, 371-373, 452-458, 471-473,	QRD161J-	"		63
	701-713, 715-717, 719, 720, 751, 752, 755, 757,				
	758-761, 763-773, 787, 790, 791, 792,				
	R359, 459	QRV141F-1103AY	C. Resistor(1%)		2
	R360, 460	QRV141F-2203AY	"		2
	RNW1	VCR0003-003	C.R. Block		1
	CFC01	CSB440E	Lock		1
	CC03, C04, 703	QCS11HJ-	C. Capacitor		3
	C757	QCY41HK-	"		1
	C701	QET41AR-	E. Capacitor		1
	CC02, 702	QET41ER-	"		3
	758				
	CC01, 352, 452, 751, 752	QET41HR-	"		5
	C753, 754	QFV41HJ-	T.F. Capacitor		2

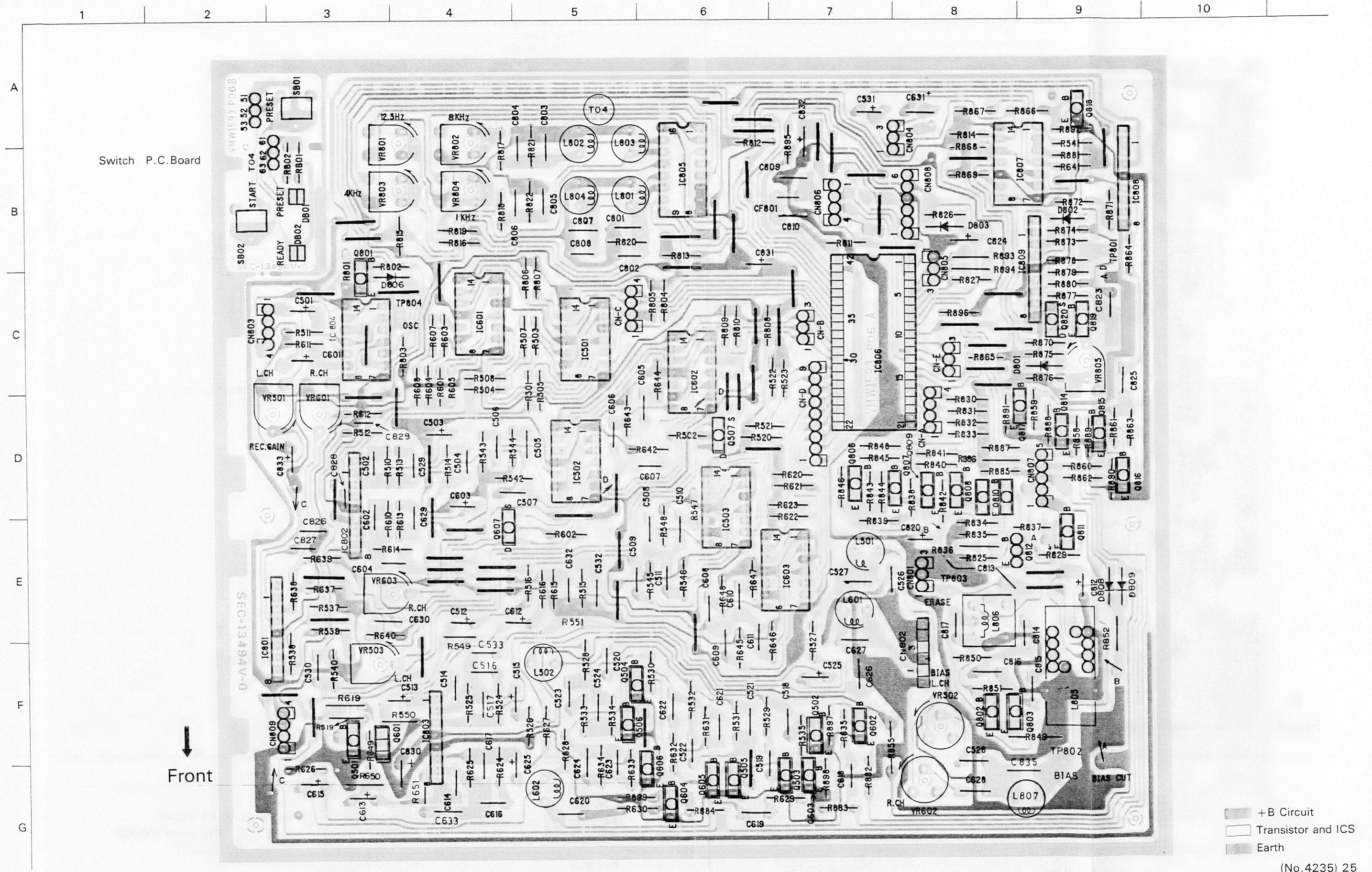
- +B Circuit
- Transistor and ICS
- Earth

⚠ parts are safety assurance parts.

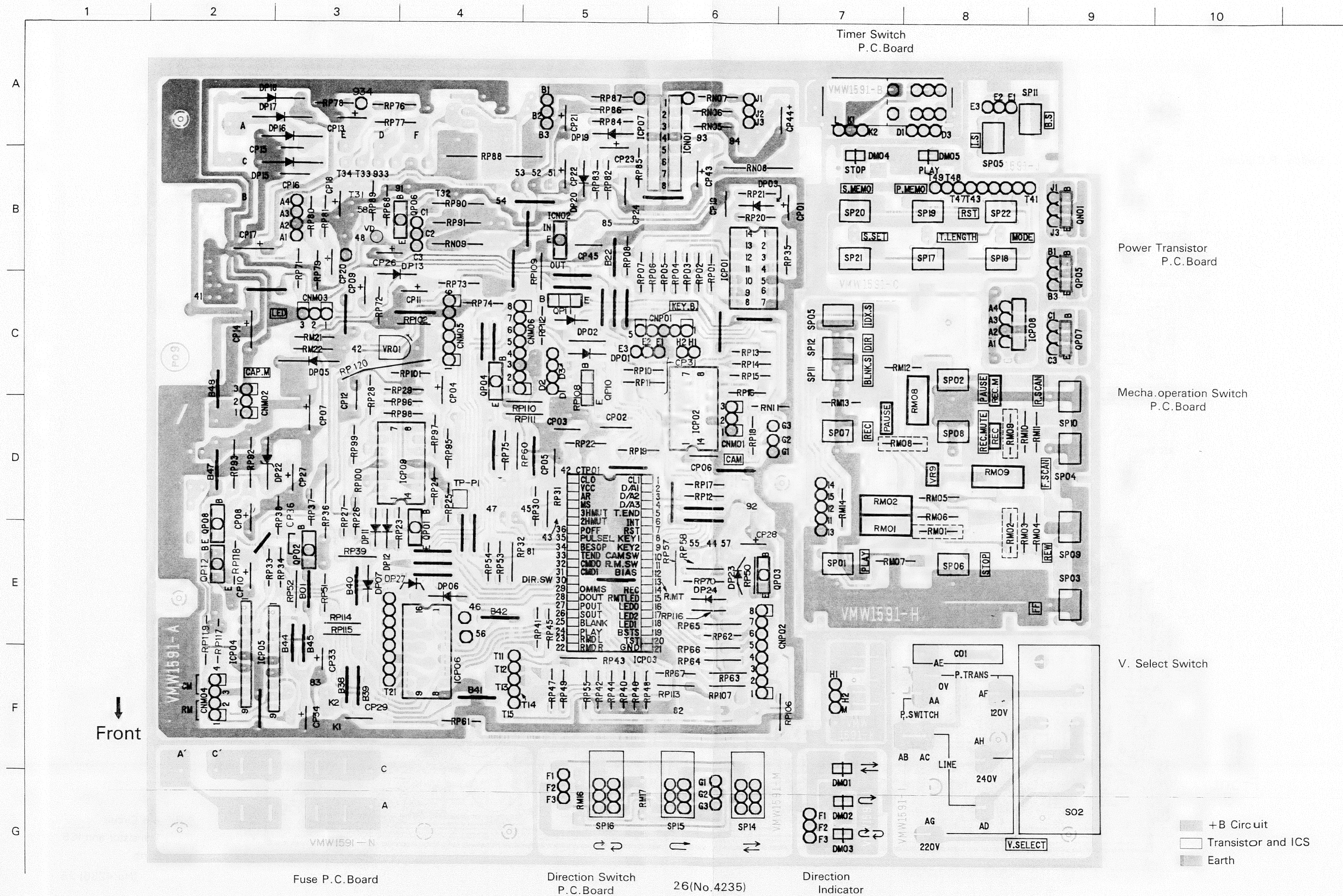
When replacing those parts, make sure to use the specified one.

B.E.S.T. Tuning P.C. Board Parts List

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty	⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	IC806	LM6405A-140	I.C.		1		C508, 509,	QCS11HJ-	C. Capacitor		17
	IC801, 802,	M5218L	"		4		517, 528,				
	808, 809						533, 608,				
	IC805	TC4052	"		1		609, 617,				
	IC803	UPC1228H	"		1		628, 633,				
	IC501-503,	UPD4066BC	"		8		809, 810,				
	601-603,						826-829,				
	804, 807						835				
	Q801, 819	2SA564(R,S)	Transistor		2		C527, 627	QCS12HJ-	"		2
⚠	Q812	2SC1162(B,C)	"		1		C832, 833	QET41AR-	E. Capacitor		2
	Q802, 803	2SC1318(R,S)	"		2		C515, 615,	QET41ER-	"		7
	Q502-506,	2SC1684(R,S)	"		19		812, 820,				
	602-606,						824, 830,				
	806-809,						831				
	814-818						C501, 503,	QET41HR-	"		13
⚠	Q810	2SC3064(E,F,G)	"		1		512, 513,				
	Q811	2SD1153	Si. Transistor		1		525, 531,				
	Q501, 601	2SD1302(R,S,T)	Transistor		2		601, 603,				
	Q820	2SK105(E,F)	F.E.T.		1		612, 613,				
	D801-803,	1SS119	Si. Diode		6		625, 631,				
	806, 808,						834				
	809						C502, 504,	QFN41HJ-	M. Capacitor		31
	VR501,503,	QVP8A0B-024	V. Resistor		8		505-507,				
	601,603,						510, 511,				
	801-804						514, 526,				
	VR805	QVP8A0B-053	"		1		529, 530,				
	VR502,602	QVZ3501-473	"		2		532, 602,				
	CN-B, CN-E,	QMV5005-003	Plug		7		604-607,				
	CN801,802,						610, 611,				
	804-806						614, 626,				
	CN-A,CN-C,	QMV5005-004	Connector		4		629, 630,				
	CN803,809						632, 802,				
	CN807	QMV5005-005	Plug		1		804, 806,				
	CN808	QMV5005-006	"		1		814-817				
	CN-D	QMV5005-009	Connector		1		C813	QFP42XJ-	P.P. Capacitor		1
	L805	VGC0009-001	Block		1		C516, 518,	QFV41HJ-	T.F. Capacitor		23
	L806	VQH1008-004	Osc. Coil		1		519-524,				
	L801	VQP0001-103S	Inductor		1		616, 618,				
	L501, 601,	VQP0001-183S	"		4		619-624,				
	802, 803						801, 803,				
	L807	VQP0001-332S	"		1		805, 807,				
	L804	VQP0001-473S	Coil		1		808, 823,				
	L502, 602	VQP0001-562S	Inductor		2		825				
	R829	QRD121J-	C. Resistor		1						
	R550	QRD141J-	"		1						
⚠	R849	QRD149J-100S	"		1						
⚠	R855	" -102S	"		1						
	R501, 503,	QRD161J-	"		176						
	504, 505,										
	507, 508,										
	510-516,										
	519-549,										
	551, 601,										
	603-605,										
	607, 608,										
	610-616,										
	619-651,										
	801-822,										
	826, 827,										
	830-846,										
	848, 850,										
	851, 852,										
	858-886,										
	888-899,										
	CF801	CSB400P	Lock		1						



Mechanism Control P.C. Board



Mechanism Control P.C. Board Parts List

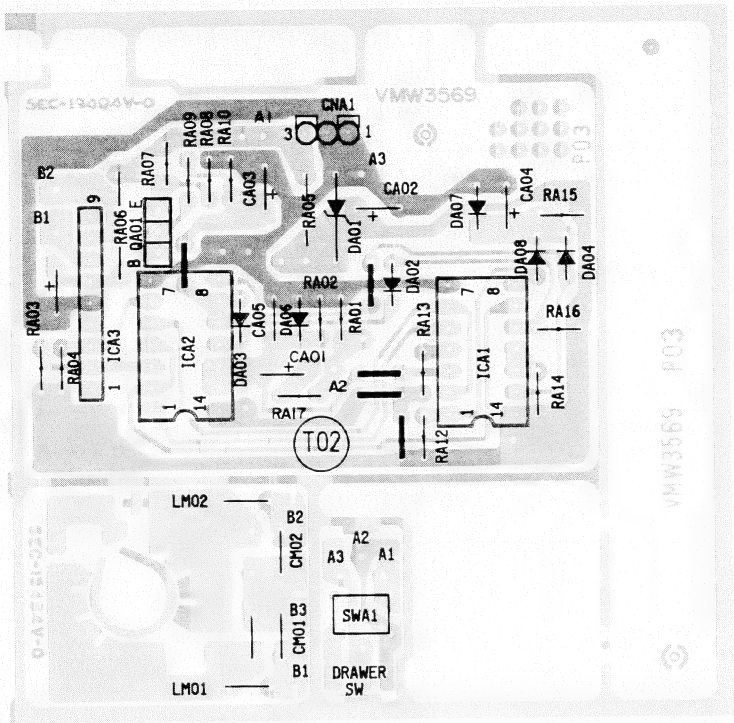
△ parts are safety assurance parts.

When replacing those parts, make sure to use the specified one.

△	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
△	ICP08	AN6531	I.C.		1
	ICP09	AN6554	"		1
	ICP04, 05	BA6208A	"		2
	ICP02	LA6339	"		1
	ICP03	LM6402H-139	"		1
	ICN01, ICP07	M5218L	"		2
	ICP06	M54519P	"		1
	ICP01	TC4069UBP	"		1
	ICN02	UPC78L05	"		1
	QP03	2SA564(R,S)	Transistor		1
	QP01, 04, 06, 12	2SC1684(R,S)	"		4
	QP02, 08	2SD471(LA,KA)	"		2
△	QN01, QP05, QP07	2SD882(Q,P)	"		3
	DP22	RD5.6E(B3)	Ze. Diode		1
	DP01-03, 06, 07, 09, 11, 12, 13, 19, 20, 24	1SS119	Si. Diode		12
	DP27	1S2473	"		1
	DP05	10E1-B	"		1
△	DP15-18	10E2-B	"		4
	VR01	QVP8A0B-014	V. Resistor		1
	CNM01-03	QMV5005-003	Plug		3
	CNM04	QMV5005-004	Connector		1
	CNP01	QMV5005-005	Plug		1
	CNM05	QMV5005-006	"		1
	CNM06, CNP02	QMV5005-008	Connector		2
	SP01-04, 06-10, 12	QSP0301-002	Push Switch		10
	SP13	QSS2301-102	Slide Switch		1
△	RP91	QRD129J-1R0	C. Resistor		1
△	RP92	QRD129J-220	"		1
	RP102	QRD141J-	"		1
△	RP90	QRD149J-220S	"		1
△	RP93	QRD149J-391S	"		1
	RN09	QRD149J-470S	"		1
△	RN07, RP87	QRD149J-471S	"		2
	RM01-14, 21, 22, RN05, 06, RP01-08, 10, 100,	QRD161J-	"		113
	101, 106, 107, 11, 113-119, 12, 120, 13-35,				
	37, 39, 40-55, 57, 58, 60-68, 70-75,				
	79-86, 89, 95, 96-99,				
△	RP36	QRG019J-100	OMF Resistor		1
	RN08	QRG019J-220	"		1
△	RP88	QRG029J-330	"		5
△	RP88	QRH019J-270M	Fuse Resistor	DD-VR9B Version	1
	CTP01	CSB800A	Lock		1

△	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	CP05, 06, 12, 15, 16, 19, 24, 29, 31, 36, 45	QCF11HP-103	C. Capacitor		11
	CP02, 03	QCS11HJ-	"		2
	CP04	QEB41EM-	E. Capacitor		1
	CP07, 08, 22, 35	QET41AR-	"		4
△	CP01, 09, 14, 18, 20, 21,	QET41ER-	"		11
	23, 26, 27, 43, 44				
△	CP11, 17, 28, 33, 34	QET41HR-	"		5

Drawer Control P.C. Board



Drawer P.C. Board Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

- + B Circuit
- Transistor and ICS
- Earth

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	ICA3	BA6208A	I.C.		1
	ICA2	HD74LS00	"		1
	ICA1	M74LS74P	"		1
	QA01	2SA564(R,S)	Transistor		1
	DA01	HZ5B3	Ze. Diode		1
	DA02-04, 06-08	MA165	Si. Diode		6
	CNA1	QMV5005-003	Plug		1
	SWA1	QSP0301-002	Push Switch		1
	LM01, 02	VQP0004-231	Inductor		2
	RA06	QRD121J-	C. Resistor		1
	RA05	QRD141J-	"		1
	RA01-04, 07-10, 12-17	QRD161J-	"		14
	CM01, 02	QCF11HP-472	C. Capacitor		2
	CA02	QET41AR-	E. Capacitor		1
	CA01	QET41CR-	"		1
	CA03, 04	QET41ER-	"		2
	CA05	QET41HR-	"		1

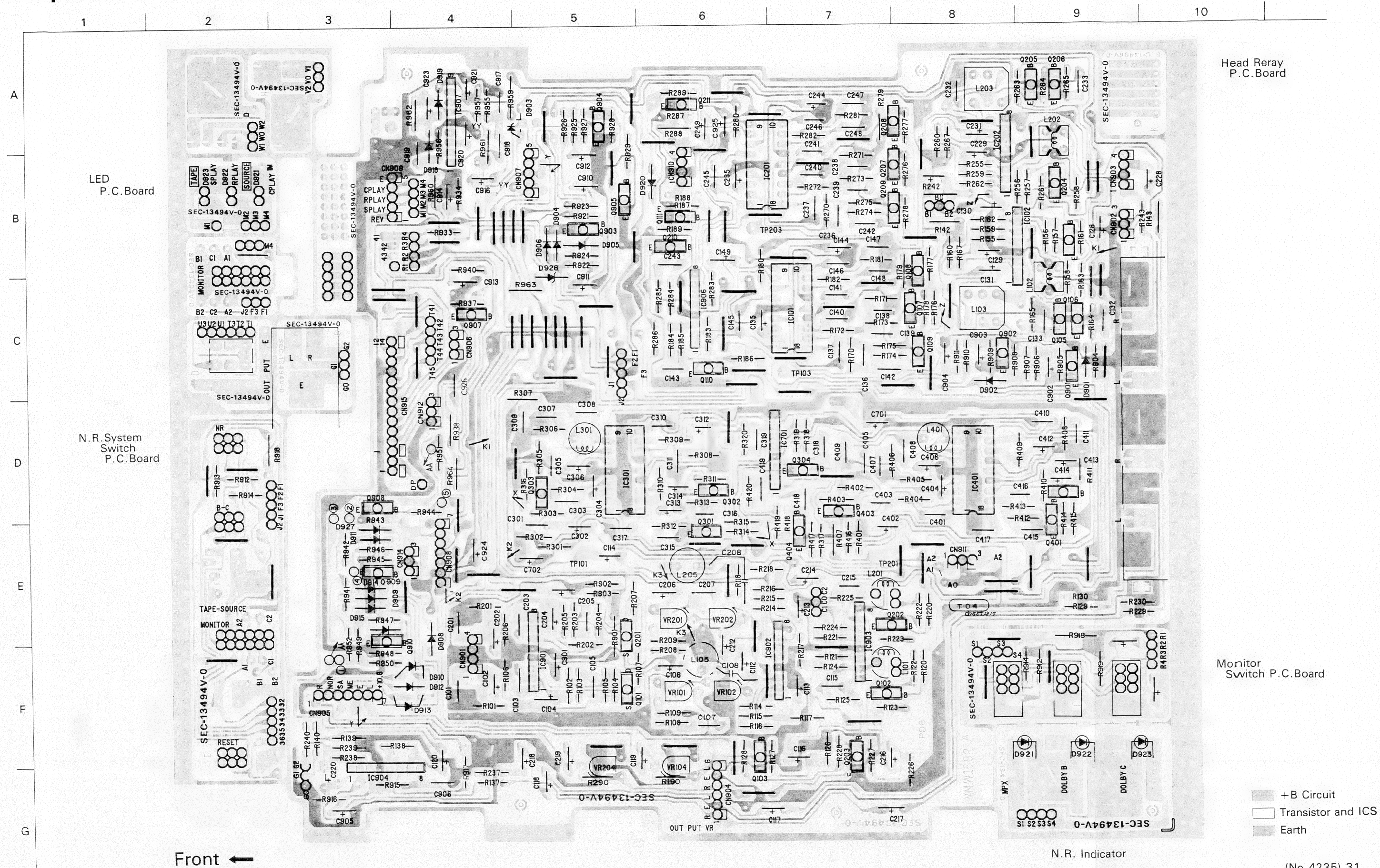
Amplifier P.C.Board Parts List

△ parts are safety assurance parts.
When replacing those parts, make
sure to use the specified one.

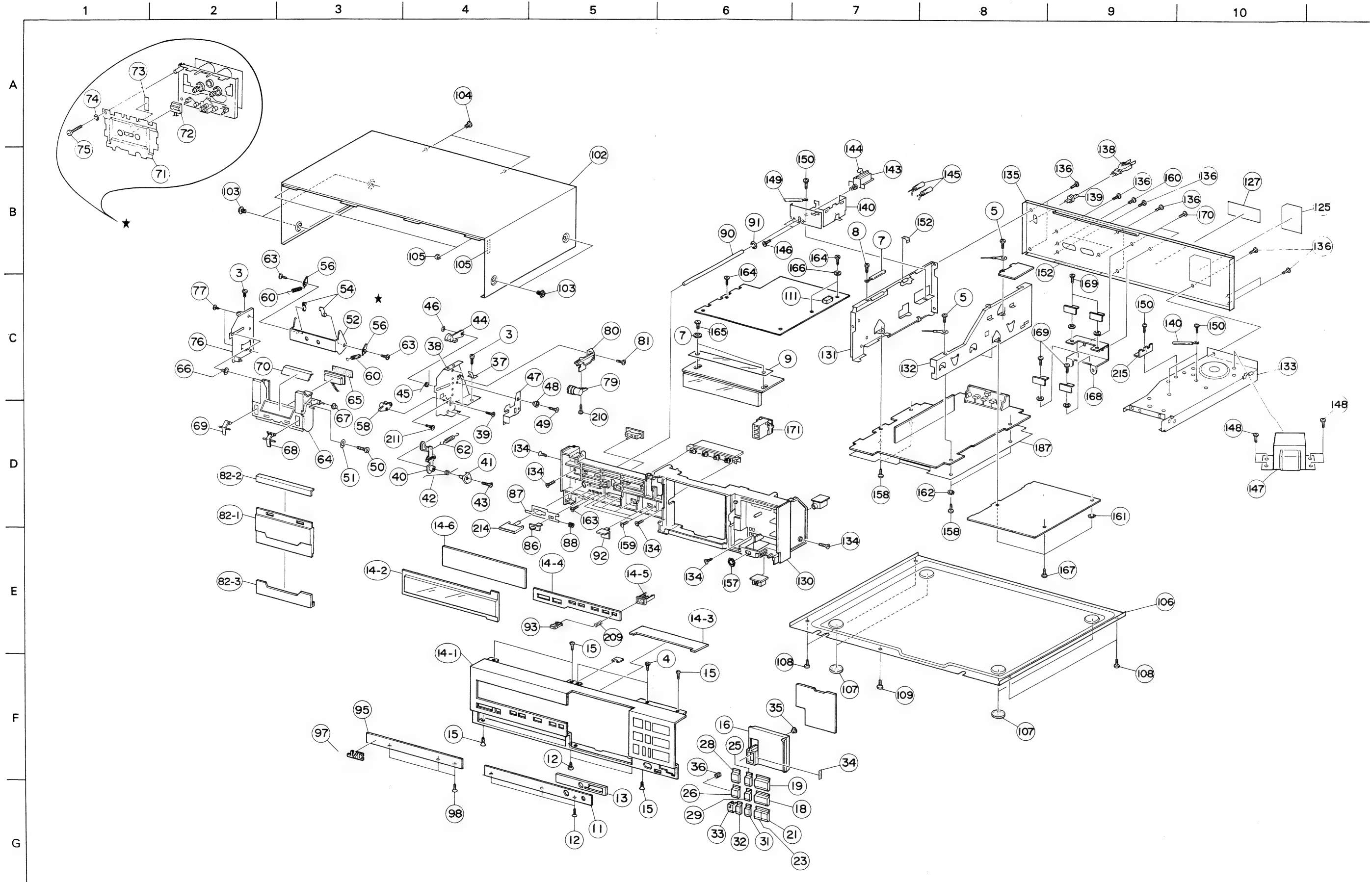
△	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty	△	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	IC907 IC102, 202, 701, 902, 903, 904, 906	LA2000S M5218L	I.C. "		1 7		R180-189, 201-209, 214-218, 220-225, 227-230,	QRD161J-	C. Resistor		
	IC101, 201, 301, 401 IC901 Q901-903 Q102, 104,	NE652N UPC1228H 2SA564(R,S) 2SC1684(R,S)	" " Transistor "		4 1 3 26		237-240, 242, 243, 255-262, 267, 270, 271-278,				
	105-108, 110, 202, 204-208, 210, 301, 302, 304,						280-289, 302-310, 312-320, 401-410, 412-420,				
	401, 402, 404, 904, 905, 907, 908-910 Q103, 111,				4		902-916, 921-929, 933, 934, 937, 938, 940-952,				
	203, 211 Q109, 209, 303, 403 Q101, 201 D928	2SD889(R,S) 2SK301(R,S) HZ11B2	" " Ze. Diode		4 2 1		955-957, 961-964 C101, 103, 108, 115, 201, 203,	OCS11HJ-	C. Capacitor		12
△	D921-923 D901-906, 908-915, 917-920, 927	SLP-170C(A,B) 1SS119	L.E.D. Si. Diode		3 19		208, 215, 308, 319, 408, 419 C102, 202 C104, 113,	QEB41EM- QET41AR-	E. Capacitor "		2 10
	VR104,204 VR101,102, 201,202 CN902,906, 911,912,	QVP8A0B-015 QVP8A0B-024 QMV5005-003	V. Resistor " Plug		2 4 5		129, 204, 213, 229, 902, 903, 927, 928 C114, 120,	QET41ER-	"		25
	914 CN901,903, 910 CN907,909 CN904	QMV5005-004 QMV5005-005 QMV5005-006	Connector Plug "		3 2 1		131, 135, 144, 214, 220, 231, 235, 244, 304, 306,				
	CN908 CN915 L105, 205 L301, 401 L101, 201	QMV5005-007 VMC0010-014 VQP0001-183S VQP0001-562S VQZ0013-001	Connector F.P.C. Socket Inductor " Filter		1 1 2 2 2		404, 406, 701, 702, 901, 905, 906, 910, 911, 913,				
	L102, 202 L103, 203 R918 R164, 179, 263-265,	VQZ0013-002S VQZ0016-101 QRD121J- QRD141J-	" " C. Resistor "		2 2 1 10		921, 924, 925 C106, 112, 116-119, 128, 130,	QET41HR-	"		39
	279, 301, 311, 411, 960 R901 R917	QRD149J-121S QRD149J-4R7S	" "		1 1		140, 141, 148, 149, 206, 212, 216-219, 228, 230,				
△	R959 R101-109, 114-118, 120-125, 127-130,	QRD149J-471S QRD161J-	" "		1 203		240, 241, 248, 249, 302, 312, 313, 314, 402, 412,				
	137-140, 142, 143, 155-163, 165, 167, 170-178,						413, 414, 904, 912, 914, 916, 920, 923, 926				

△	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty	△	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	C105, 107, 132, 133, 136, 145, 205, 207, 232, 233,	QFN41HJ-	M. Capacitor		17		VR103,203 VR901 RR1	QVZ5019-002V QVZ5203-002 QRD161J-	V. Resistor " C. Resistor		2 1 1
	236, 245, 303, 305, 403, 405, 918 C137-139,	QFV41HJ-	T.F. Capacitor		34						
	142, 143, 146, 147, 237-239, 242, 243, 246, 247,										
	301, 307, 309-311, 315-318, 401, 407, 409-411,										
	415-418, 917, 919										

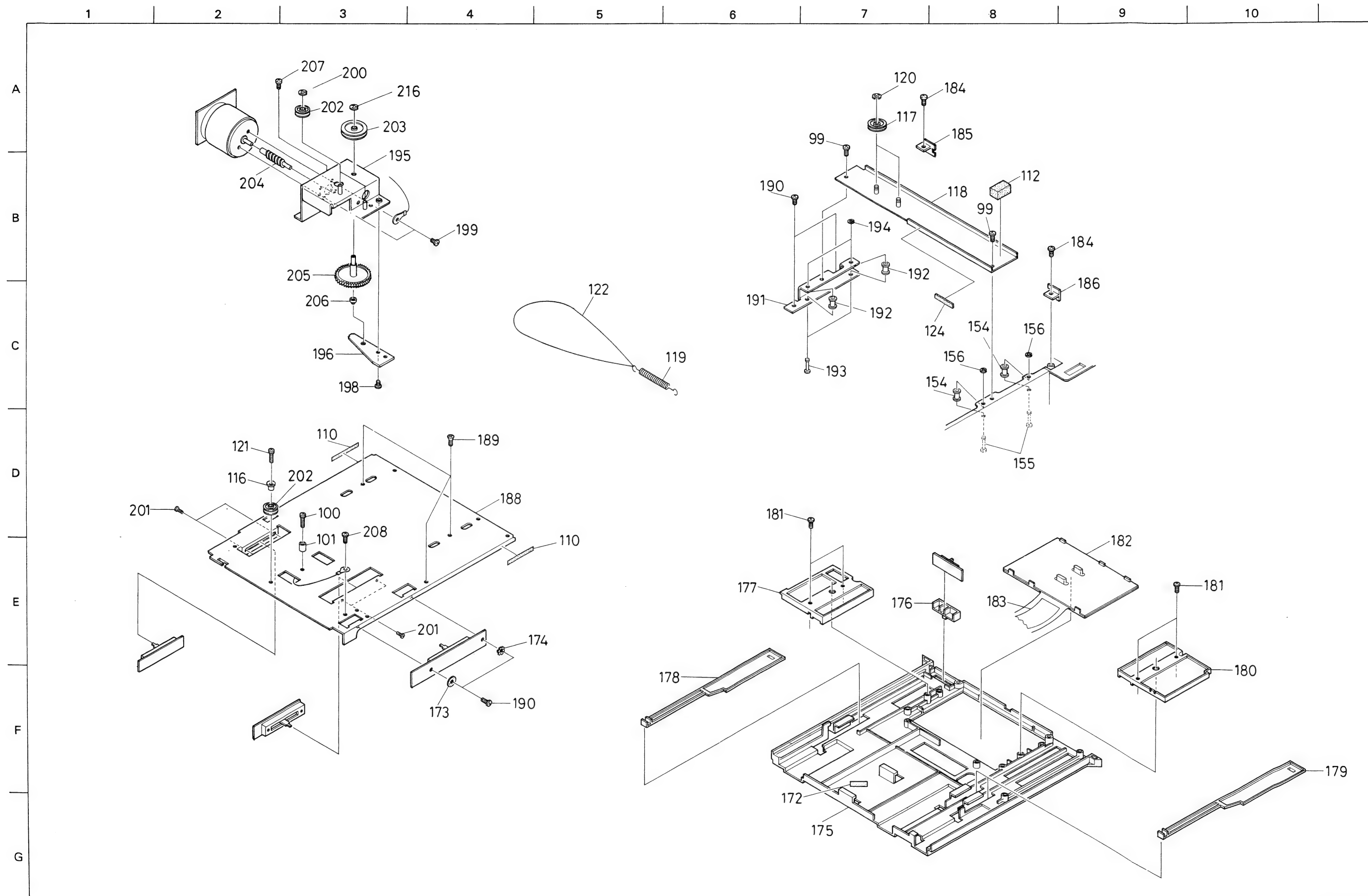
Amplifier P.C. Board Parts List



Exploded View of Enclosure Assembly (1)



Exploded View of Enclosure Assembly (2)



Enclosure Assembly Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

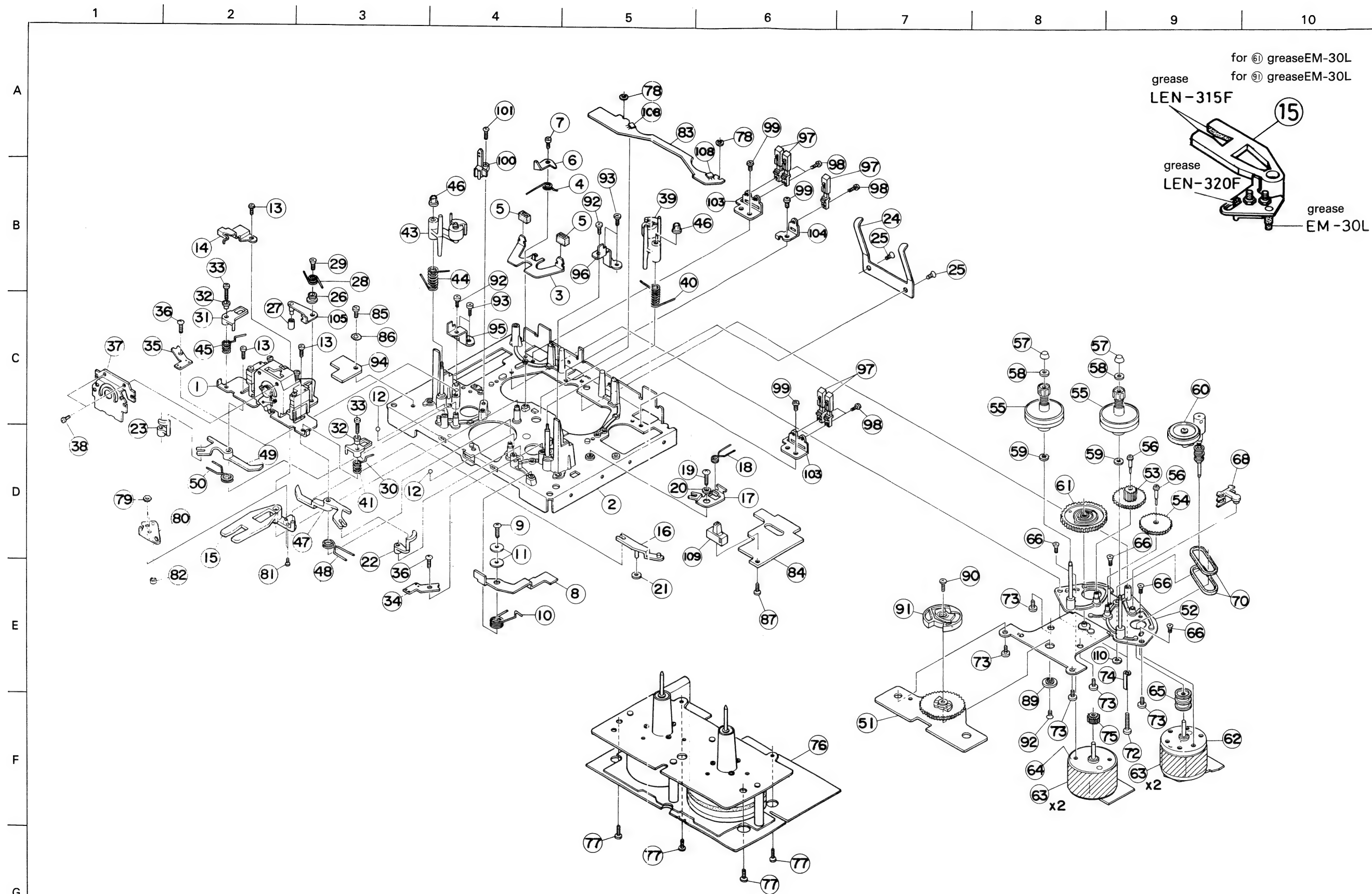
⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	3	SDST3006C	Screw	Mecha. — A. Chassis	2
	4	"	"	Mecha. — F. Plate	2
	5	SDST3006Z	"		2
	7	Q03095-235	Washer		1
	8	SBSF3008V	Screw		1
	9	VMA4179-001	Insulator		1
	11	VJD3389-003	Front Plate		1
	12	SSSF2608Z	Screw		5
	13	VJD3404-001	Fitting (2)		1
	14-1	VJC1322-002	Front Panel		1
	14-2	VJK3205-004	Finder		1
	14-3	VJD4662-002	Fitting		1
	14-4	VJD3391-004	Escutcheon		1
	14-5	VJD4753-002	"		1
	14-6	VJD4615-005	Filter		1
	15	SSSF3008Z	Screw	F. Plate — F. Panel	5
	16	VDG2120-001F4A1B	Case Ass'y		1
	35	VYH4770-001	Cap		1
	36	VKW3001-104	Spring		1
	37	VKY4297-002	"		1
	38	VKL5352-00D	Bracket		1
	39	VKZ4143-002	Screw		2
	40	VKS4522-003	Eject Arm		1
	41	VKS4377-001	Holder		1
	42	VKW3006-102	Spring		1
	43	SDST2614Z	Screw		1
	44	VKS4378-004	Lock Arm		1
	45	VKW3006-070	Spring	Lock Arm	1
	46	REE2500	E. Washer		1
	47	VKL5489-001	Eject Lever		1
	48	VKH3013-004	Collar		1
	49	SSST2606Z	Screw		1
	50	SDSF2608R	"		1
	51	Q03091-201	Washer		1
	52	VKL3490-00A	Holder Bracket		1
	54	VKS4594-001	Lift Arm		2
	56	VKS4595-001	Plate		2
	58	VKS4596-001	Slide Shaft		1
	"	VKS4596-001	"		1
	60	VKW4454-001	Spring		2
	62	" -006	"		1
	63	SDSF2606Z	Screw		2
	64	VJT2080-004	Cassette Holder		1
	65	VYSA1R4-066	Spacer		1
	66	VKS4380-001	Collar		1
	67	" -002	"		1
	68	VKS4379-001	Lever		1
	69	" -002	"		1
	70	VJD4661-003	Plate		1
	71	VJD3383-005	Mecha. Plate		1
	72	SLF-401C-05	L.E.D.		1
	73	VYSA1R4-024	Spacer		1
	74	WAS2600N	Washer		1
	75	SPSP2618R	Screw		1
	76	VKL5353-00B	Mecha. Bracket (L) A		1

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	77	VKZ4143-002	Screw	M. Chassis — M. Bracket	2
	79	VYH4054-00D	Gear		1
	80	VKS3187-002	Holder		1
	81	SDST3006Z	Screw		1
	82-1	VJT3105-003	Lid		1
	82-2	VJT4072-003	Lid Plate		1
	82-3	VJT4073-004	"		1
	86	VXS4041-002	Slide Knob	Timer	1
	87	VKL5360-001	Plate	Timer Safety	1
	88	VKW3001-093	Spring		1
	90	VKS4003-008	Pipe		1
	91	Q03093-504	Washer		1
	92	VXP4178-002	Push Knob		4
	93	VXP4369-001	"	Open, Close	1
	95	VJD3441-002	Front Plate		1
	97	E70913-001	Mark		1
	98	SSSF2608Z	Screw		3
	99	SDST3006Z	"		2
	100	SSST3014Z	"		1
	101	VKH3000-070	Collar		1
	102	VJC1235-005	Top Cover		1
	103	VKZ3001-006	Screw		4
	104	SDST3006N	"		2
	105	VYSA1R8-027	Spacer	Top Cover	4
	106	VJC1195-007	Bottom Cover		1
	107	VJF4003-002	Foot		4
	108	SDST3006Z	Screw		4
	109	SBSF3010Z	"		1
	110	VYSS101-007	Spacer		2
	111	VYSH115-004	"		1
	112	VYSH110-010	"		1
	117	VYH5407-001	Roller		2
	118	VKL5498-00B	Bracket Ass'y		1
	119	VKW3003-006	Spring		1
	120	REE2500	E. Washer		2
	121	SSST3014Z	Screw	Shaft	1
	122	VHR2ZK9-05AT	Dial Cord		1
	124	VYSR101-004	Spacer		1
	125	VYN2120-002PA	Name Plate	DD-VR9B	1
	"	" -003PA	"	DD-VR9A	1
	"	" -004PA	"	DD-VR9C	1
	"	" -005PA	"	DD-VR9E	1
	"	" -006PA	"	DD-VR9J	1
	"	" -007PA	"	DD-VR9U	1
	127	VND4006-017	C. Label		1
	130	VJC1265-005	Front Panel		1
	131	VKL2180-002	Chassis Base		1
	132	VKL2179-004	Amp. Chassis (C)		1
	133	VKL2178-001	" (R)		1
	134	SSST3006Z	Screw	F. Panel	5
	135	VJC1261-010	Rear Panel	DD-VR9A/C/J	1
	"	" -011	"	DD-VR9B/E/U	1
	136	SDST3006N	Screw		9
⚠	138	QMP1200-200	Power Cord	DD-VR9C/J	1
⚠	"	QMP2560-200	"	DD-VR9A	1

△	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
△	138	QMP3900-200	Power Cord	DD-VR9E	1
△	"	QMP7600-200	"	DD-VR9U	1
△	"	QMP9017-008BS	"	DD-VR9B	1
△	139	QHS3876-162	S.R. Bushing	DD-VR9A/C/E/J/U	1
△	"	" -162BS	"	DD-VR9B	1
△	140	VKL3297-003	Power Bracket		1
△	142	VYSA1R6-042	Spacer		2
△	143	QSP1110-305	Push Switch	DD-VR9A/E	1
△	"	" -305BS	"	DD-VR9B	1
△	"	" -306	"	DD-VR9U	1
△	"	" -308	"	DD-VR9C/J	1
△	144	QCZ9014-103	C. Capacitor	DD-VR9C/J	1
△	"	QFH42BM-103N	M. Capacitor	DD-VR9U	1
△	"	QFZ9010-103	"	DD-VR9A/B/E	1
△	145	TAW000504-01	Connector		2
△	146	LPSP3006Z	Screw		2
△	147	VTP66A7-041B	Power Transformer	DD-VR9J	1
△	"	" -042B	"	DD-VR9C	1
△	"	VTP66C7-041B	"	DD-VR9E	1
△	"	" -041BBS	"	DD-VR9B	1
△	"	VTP66T7-031B	"	DD-VR9A	1
△	"	VTP66U7-041B	"	DD-VR9U	1
△	148	SDST3006Z	Screw		4
△	149	VKZ4001-011	Wire Holder		3
△	150	SDST3006Z	Screw	W. Holder	1
△	152	VYSA1R8-027	Spacer		1
△	154	VKS4523-001	Pulley		2
△	155	VKH4423-001	Shaft		2
△	156	REE2000X	Washer		2
△	157	VKZ4150-001	Special Nut	HP	1
△	158	SDST3006Z	Screw	Main P.C.B.	4
△	159	SSST3006Z	"	Push Switch	2
△	160	SDSF3008N	"	Pin	2
△	161	WBS3000N	Washer	P.C.B. Earth	1
△	162	WNS3000Z	"	Shield Plate	1
△	163	SSSP2606Z	Screw	Timer Switch	2
△	164	SDST3006Z	"	BEST P.C.B.	3
△	165	SBSF3008V	"	Display P.C.B.	1
△	166	Q03095-235	Washer		1
△	167	SDST3006Z	Screw	Mecha. Control P.C.B.	3
△	168	VKL5509-002	Heat Sink		1
△	169	DPSP3008Z	Screw		4
△	170	SDST3006N	"	Heat Sink	2
△	171	VJD4658-001	Reflector		1
△	172	F00303-34	Spacer		1
△	173	Q03095-205	Washer		1
△	174	WBS3000N	"		1
△	175	VJD2200-002	Panel		1
△	176	VXS4096-001	Slide Knob	REV. Mode Switch	1
△	177	VJD4663-002	Blind (1)		1
△	178	VXS3011-004	Slide Knob	Output	1
△	179	" -003	"	Input	2
△	180	VJD4664-001	Blind		1
△	181	SDSF2608Z	Screw		4
△	182	VGZ0008-001	Switch		1

△	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
△	184	SDSF3008Z	Screw		2
△	185	VKS4525-001	Holder		1
△	186	" -002	"		1
△	187	VMA4173-002	Shield Plate		1
△	188	VKL2181-003	Bottom Cover		1
△	189	SSSF2608Z	Screw		3
△	190	SDST3006Z	"		2
△	191	VKL5359-001	Pulley Bracket		1
△	192	VKS4523-001	Pulley		2
△	193	VKH4423-001	Shaft		2
△	194	REE2000X	Washer		2
△	195	VKL5499-00B	Bracket		1
△	196	VKL5497-001	Support		1
△	198	SDST3006Z	Screw		2
△	199	LPSP3004Z	"		2
△	200	REE2500X	E-Ring		2
△	202	VYH5407-001	Roller		1
△	"	" -001	"		2
△	203	VYH5408-002	Drum		1
△	204	VKR4362-001	Gear		1
△	205	VKR4385-00A	"		1
△	206	VKH3001-058	Flange Collar		1
△	207	SDST3006N	Screw		1
△	208	SDST3004Z	"		1
△	210	SDSF3008Z	"		1
△	211	SDSF2606Z	"		1
△	214	VXP4308-001	Push Button		1
△	216	REE2000X	Washer		1



Exploded View of Mechanism Assembly



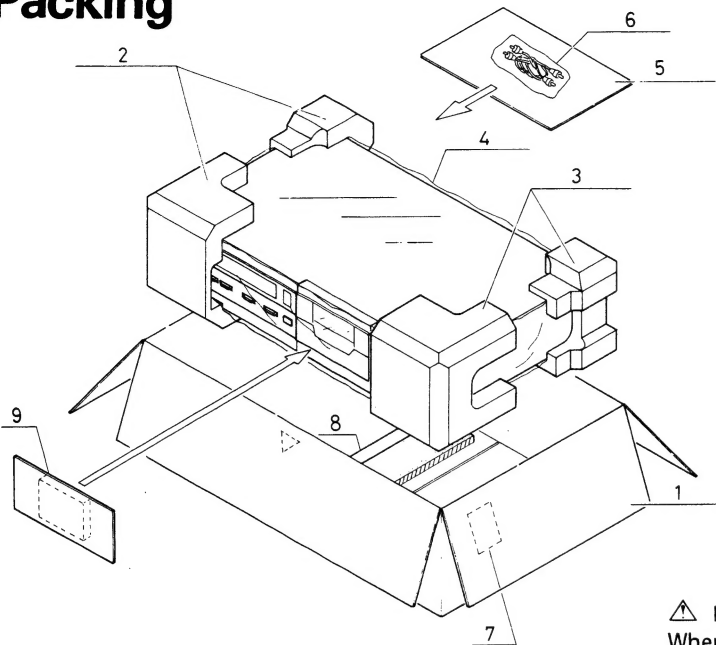
Mechanical Component Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make
sure to use the specified one.

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	1	VDG2120-001MA1	Head Base Ass'y		1
	2	VKL2121-00L	Chassis Base Ass'y		1
	3	VKL5347-002	Brake Bar		1
	4	VKW4391-001	Spring		1
	5	VKZ4129-001	Brake Rubber		2
	6	VKL5409-002	Lever		1
	7	SDSF2606Z	Screw		1
	8	VKL5350-004	Lever		1
	9	SDSF2606Z	Screw	Brake Bar	1
	10	VKW4388-001	Spring		1
	11	Q03093-622	Washer		2
	12	T41615-004	Steel Ball		2
	13	SPSP2003Z	Screw		2
	14	VKY4294-005	Spring Plate		1
	15	VKS3164-003	R. Lever		1
	16	VKS4517-002	Arm		1
	17	VKL5349-004	Lever		1
	18	VKW4379-001	Spring		1
	19	SDSF2606Z	Screw		1
	20	Q03091-150	Washer		1
	21	WNS2600N	"		1
	22	VKS4539-003	Kick Lever		1
	23	" -001	"		1
	24	VKY4282-001	Spring		1
	25	VKZ4128-001	Screw		2
	26	VKH4421-004	Collar		1
	27	VKH3000-072	"		1
	28	VKW4431-002	Spring		1
	29	SPSP2006Z	Screw		1
	30	VKS4515-007	Lever		1
	31	" -008	"		1
	32	VKH3000-059	Collar		2
	33	SPSP2006Z	Screw		2
	34	VKY4281-005	Spring Plate		1
	35	" -004	"		1
	36	SDSF2606Z	Screw		2
	37	VKZ4242-001	Head Wire Clamp		1
	38	VKZ4204-001	Screw		2
	39	VKP4132-00J	Pinch Roller		1
	40	VKW3006-067	Spring		1
	41	VKW4384-002	"		1
	42	SSSK2035N	Screw		2
	43	VKP4132-00K	Pinch Roller		1
	44	VKW4407-001	Spring		1
	45	VKW4390-002	"		1
	46	VKS4513-001	Screw		2
	47	VKZ4192-001	Lever		1
	48	VKW4385-003	Spring		1
	49	VKZ4197-003	P. Roller Lever		1
	50	VKW4386-003	Spring		1
	51	VKR4322-00F	Cam Switch Ass'y	SP23	1
	52	VKL3429-00A	Base		1
	53	VKR3001-003	Gear		1
	54	" -004	"		1
	55	VKR4281-00C	Reel Disk		2

	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	56	VKS4533-001	Stopper		2
	57	VKS4131-001	Reel Stopper		2
	58	VKR4170-001	Ring		2
	59	VKZ4003-003	Felt		2
	60	VKR4323-00D	Idler		1
	61	VKS3203-001	Cam Gear (1)	M901 Reel M902	1
	62	BFS7B13	DC Motor		1
	63	FE-ZMS409	Shield Core		4
	64	MMN-6C2RK	DC Motor		1
	65	VKS4607-002	Motor Pulley		1
	66	VKZ4128-001	Screw		4
	68	VKS4680-002	Belt Guide		1
	70	VKB3000-077	Belt		2
	72	SDSP2612Z	Screw		2
	73	SDSF2606Z	"		5
	74	VKY4298-001	Plate	M903	1
	75	VKR4326-001	Gear		1
	76	MC956C-2	DD Motor		1
	77	SDSP2618Z	Screw		4
	78	Q03093-522	Washer		2
	79	NTB2000	Nut		2
	80	VKL5466-00B	R. Bracket Ass'y		1
	81	SSSK2050N	Screw		2
	82	VKH3000-060	Collar		1
	83	VMW4653-001	P.C. Board		1
	84	VMW3564-005	"		1
	85	SPSP2605Z	Screw		1
	86	WBS2600N	Washer		1
	87	SDSF2606Z	Screw		1
	88	SSSP2603Z	"		1
	89	VKH4430-001	Collar		1
	90	SPSP2003Z	Screw		1
	91	VKR3107-003	Cam		1
	92	VKZ4194-001	Screw		2
	93	SPSK2028Z	Mini Screw		4
	94	VMW4668-001	P.W. Board		1
	95	VKL5464-003	Bracket		1
	96	" -004	"		1
	97	VSH1133-002	Leaf Switch		5
	98	SDSP2004Z	Screw		5
	99	LPSP2604Z	"		3
	100	SPI-302	Reflector		1
	101	SDSF2606Z	Screw		2
	102	F00303-34	Spacer		4
	103	VKL5550-001	SW Bracket (1)		2
	104	VKL5551-001	" (2)	ICM02 SP27	1
	105	VKL5390-00D	Cam Lever Ass'y		1
	108	DN6838A	I.C.		2
	109	QSS2201-008	Slide Switch		1
	110	VKZ4004-001	Washer		1

Packing

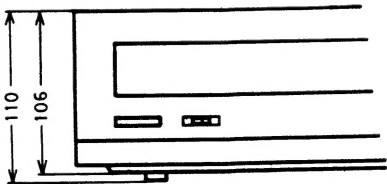
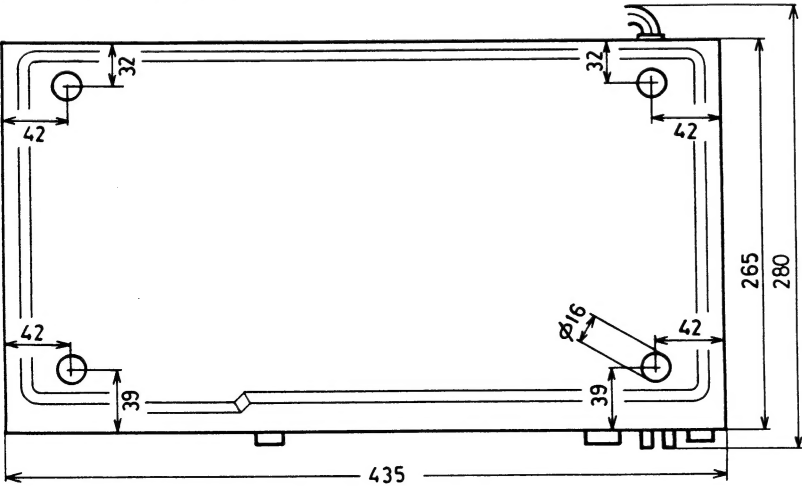


- POWER switch OFF
- TIMER switch OFF
- NR switch OFF
- DOLBY B/C switch B
- MONITOR switch Tape
- INPUT LEVEL volume Center
- OUTPUT LEVEL volume MAX.
- MODE switch Reverse

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	1	VDP2120-J02	Carton	DD-VR9B	1
	"	" -J03	"	DD-VR9A	1
	"	" -J04	"	DD-VR9C	1
	"	" -J05	"	DD-VR9E	1
	"	" -J06	"	DD-VR9J	1
	"	" -J07	"	DD-VR9U	1
	2	VPH3125-001	Cushion	Left	1
	3	VPH3126-001	"	Right	1
	4	VPE3004-026	Poly Bag	for Unit	1
	5	" -007	"	for Instruction	1
	6	AP4056A-36	"	for Pin Cord	1
	7	E66416-003	Envelope	DD-VR9J/U (PX, ESS)	1
	8	VPK4181-00A	Cushion Ass'y	Bottom Side	1
	9	VPK4165-001	"	Front Side	1
		Q04141H	Wire Clamp	for Power Cord	1
		VPK4002-006	Sheet	for Unit	1
		VPZ4001-001	Serial Ticket		1

Dimension



unit : mm

Accessories

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

⚠	Parts No.	Parts Name	Remarks	Q'ty
	VMP0039-00A	Pin Cord Ass'y		2
	VNN0147-301	Instruction Book	DD-VR9B/E	1
	" -901	"	DD-VR9A/C/J/U	1
	BT20060	Guaranty Certificate	DD-VR9B	1
	BT20066	"	DD-VR9B/E	1
	BT20029C	Warranty Card	DD-VR9A	1
	BT20025H	"	DD-VR9C	1
	BT20064	"	DD-VR9E(JED)	1
	BT20047A	"	DD-VR9J/U (PX, EES)	1
	BT20046B	Special Reply Card	DD-VR9J	1
	BT20071	SVC Center List	DD-VR9C	1
	BT20046B	Special Reply Card	DD-VR9U (PX, EES)	1
	BT20044D	Safety Instruction	DD-VR9J	1
	TJL000420-01	BEAB Label	DD-VR9B	1
	TLT000505-01	Caution Seal	DD-VR9B	1
	VND4113-001	G. Caution	DD-VR9B	1
	VNC5004-001	Mark Sticker	DIN 45500 DD-VR9B/E	1
	VNC1200-002	Copyright Law Warning	DD-VR9C	1
	T44362-001	CSA Label	DD-VR9C	1
	VND4037-002	F. Mark	DD-VR9E	1
	VNC5311-201	Caution Card	DD-VR9U (EES)	1
	" -202	"	" (PX)	1
	V04062-001	Siemens Plug	DD-VR9U	1



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